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Ancient Ammon

ANCIENT AMMON

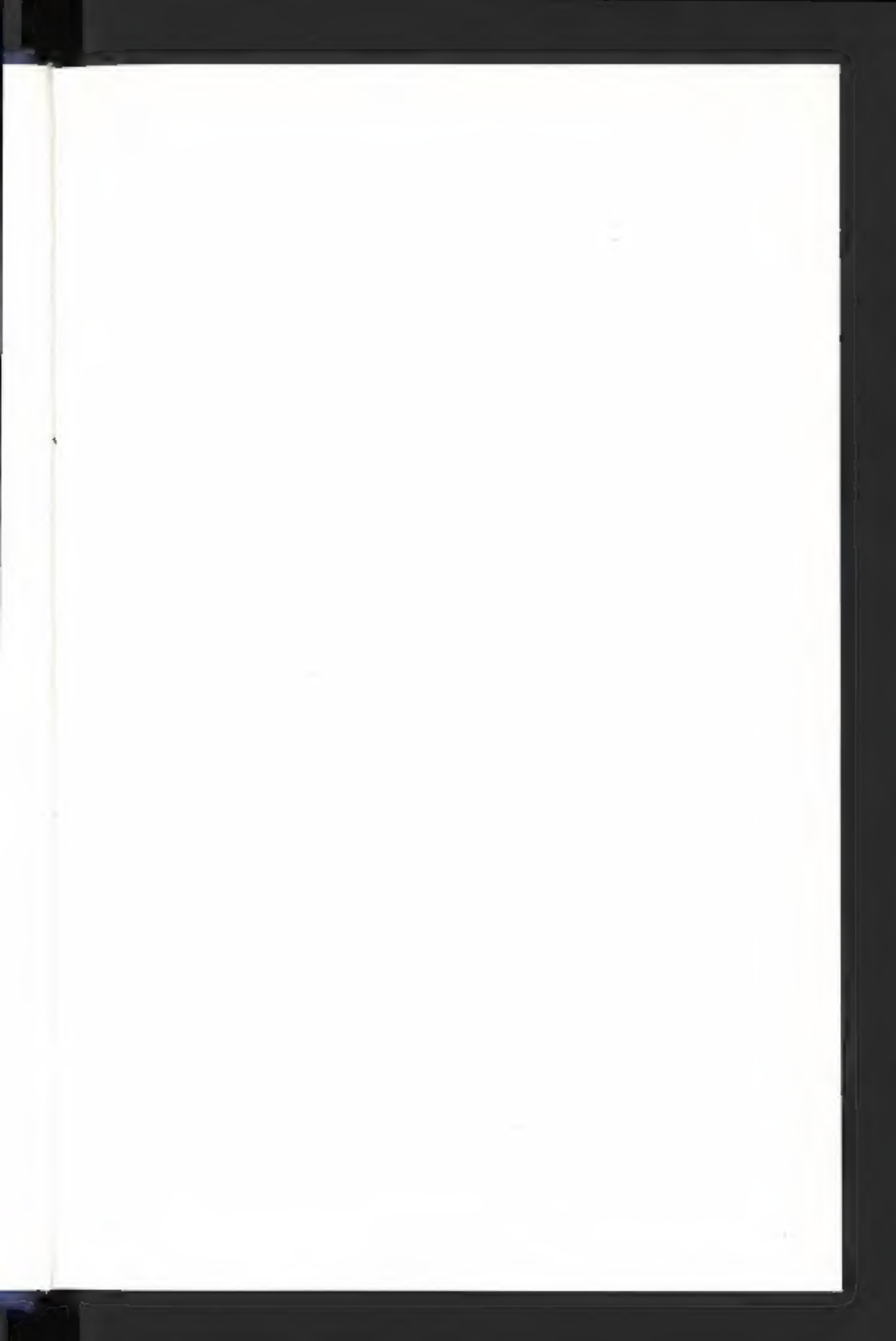
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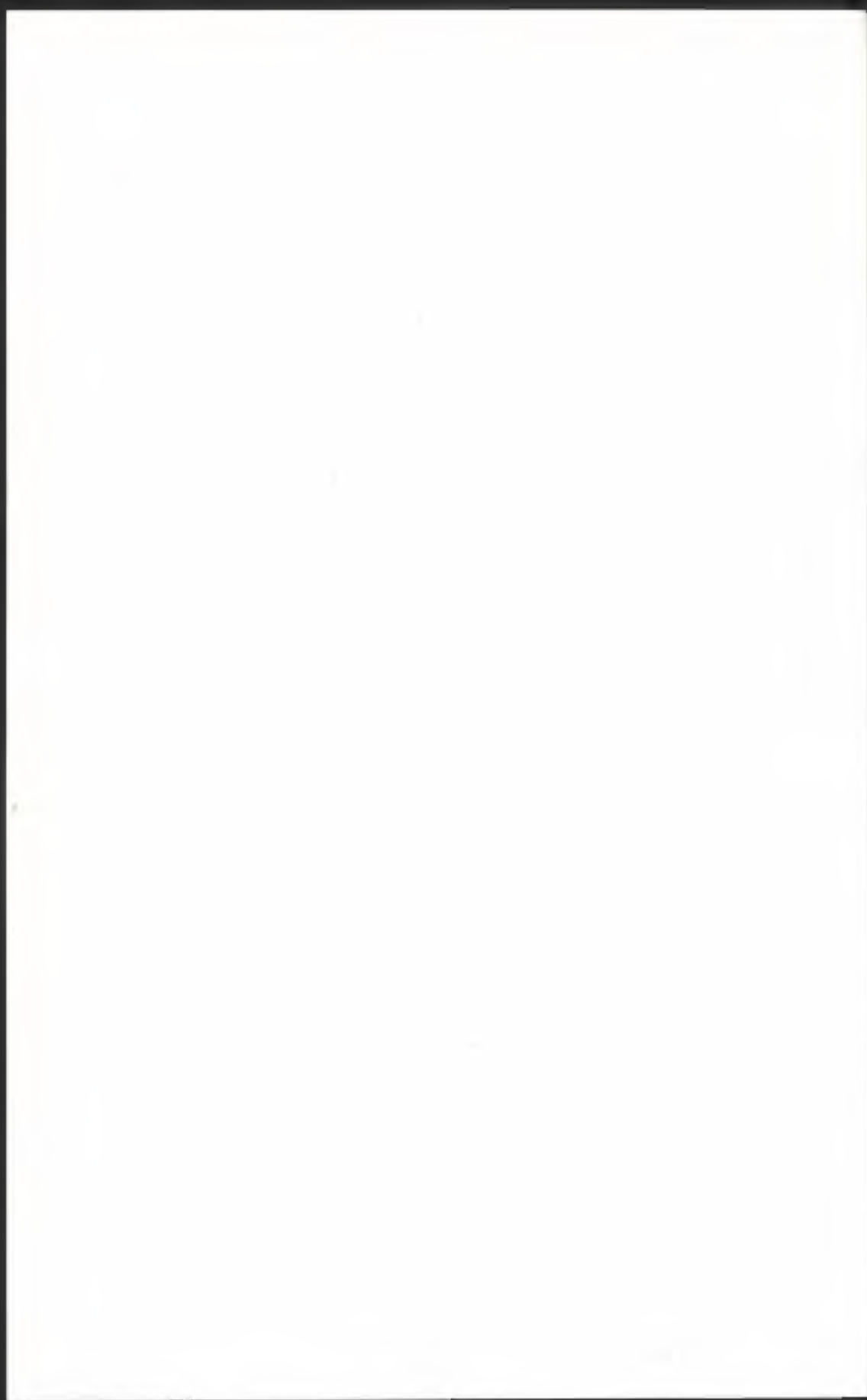
BURTON MACDONALD AND RANDALL W. YOUNKER





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ANCIENT AMMON

STUDIES IN THE HISTORY AND CULTURE OF THE ANCIENT NEAR EAST

EDITED BY

B. HALPERN AND M.H.E. WEIPPERT

VOLUME XVII



ANCIENT AMMON

EDITED BY

BURTON MACDONALD AND RANDALL W. YOUNKER



BRILL
LEIDEN · BOSTON · KÖLN
1999

DS
154
.215
.A53
1999

This book is printed on acid-free paper.

Library of Congress Cataloging-in-Publication Data

Ancient Ammon / edited by Burton MacDonald and Randall W. Yunker.
p. cm.—(Studies in the history and culture of the ancient
Near East, ISSN 0169-9024 ; v. 17)
Includes bibliographical references and index.
ISBN 9004107622 (cloth : alk. paper)
I. Ammonites. 2. Jordan—Antiquities. 3. Excavations
(Archaeology)—Jordan. I. MacDonald, Burton, 1939–
II. Yunker, Randall W. III. Series.
DS154.215.A53 1999
933—dc21

99-24375
CIP

Die Deutsche Bibliothek - CIP-Einheitsaufnahme

Ancient Ammon / ed. by Burton Macdonald and Randall W.
Yunker. - Leiden ; Boston ; Köln : Brill, 1999
(Studies in the history and culture of the ancient Near East ; Vol. 17)
ISBN 90-04-10762-2

ISSN 0169-9024
ISBN 90 04 10762 2

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PRINTED IN THE NETHERLANDS

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CHAPTER ONE

REVIEW OF ARCHAEOLOGICAL RESEARCH IN AMMON

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Introduction

The Ammonites known from both biblical and extra-biblical sources were an ancient people who inhabited the northern Central Taurus-Jordan plateau located in the modern Hashemite Kingdom of Jordan from the latter part of the second millennium B.C. until the middle of the first millennium B.C. Their country was known as Ammon, whose capital was called Rabbath-Ammon, or simply Ammon. They are best known for their numerous encounters with the biblical Israelites. However, they are also important because their territory was astride the major caravan routes that connected Arabia with the major cultural centers of the Fertile Crescent. Occasional references to the Ammonites therefore also appear in the ancient records of these early empires.

Modern research in Ammon began in the early part of this century, prior to World War I and has continued to the present. Because scholarly attention has centered primarily on Ammon's relations to the west—Israel and Judah—there has been little attempt to systematically either summarize or utilize the results of the numerous excavations that have been conducted in Transjordan during the last 100 years. This it seems appropriate to set the stage for the essays in this volume by presenting a brief review of the research that has been conducted on the other side of the Jordan.

Howard Crosby Butler Survey

Some of the first surveys in Ammon in the twentieth century were made in 1891 by H.C. Butler of Princeton University. In 1911 he provided a detailed survey of Ajlun al-Amud, later the home of the Edomites, a family who were closely associated with the Ammonites during the

Parman period (about 1900). Butler conducted probably the most extensive survey of the city of Amman up to that time (Butler 1954: 34-62).

Duncan Mackenzie Survey

In 1910 Duncan Mackenzie and F.G. Newton conducted a special survey of dolmen and megalithic structures of 'Amman' on behalf of the Palestine Exploration Fund. While some of Mackenzie's hypotheses concerning the dolmen would no longer be considered valid, he does provide some useful descriptions of the Amman region, including the ruin (large stone towers or forts) surrounding Amman, and the city of Amman, itself (Mackenzie 1911: 1-40).

C. C. McCown

During the spring of 1930 the director of the American Schools of Oriental Research in Jerusalem (later known as the Albright Institute for Archaeological Research) C. C. McCown led a field trip to the school that included Transjordan.

McCown's party entered Amman via the Wadi as-Sir past the ruins at 'Iraq al-Amir and Qasr al-'Abd and the village of Wadi as-Sir. McCown noted that the road between the village of Wadi as-Sir and 'Amman passed by "a group of ruins, many of them of a sort suggesting the character common in the region" (1930: 12). He also observed that these "standing ruins" were at "Ruq'at al-Mallat." McCown notes that:

This "stronghold" or "castle of the cable" — a circular masonry wall, now partial, of stones, has been shown by Mackenzie to be made of a series of megalithic buildings, among them some of the oldest in the land.

McCown followed Mackenzie's mistaken dating of these structures to the Chalcolithic-Early Bronze Age, although recent work now suggests dates in the Iron II Age for most of these structures (cf. Younker 1990; Kletter 1999).

After visiting the later period ruins at the 'Amman Citadel the party headed north to Yabuz, passing additional megalithic monuments like those west of 'Amman. Near the path, two or three miles from Yabuz they saw two megalithic pillars. The tour continued north of Amman focusing on the late period remains at Yabuz.

Khirbat Khan, Khirbat al-Halabat, Khirbat as-Samra, Medwar Nal and Mar Ahas

De Vaux and Benoit Surveys

Probably the first modern survey of the Ammon region is that of R. de Vaux and P. Benoit who explored the region of Salt and the Bajilah Valley in the late 1930s (de Vaux and Benoit 1938). These data were used to construct a historical geography of the region (de Vaux 1944).

Albright Exploration

W. F. Albright, the leading American Orientalist of his time, made several trips during the late 1920s and early 1930s to Transjordan that took him along the borders and into the heartland of Ammon. During his several trips he traveled along the Jordan Valley up to Jericho, across the Zarga (Jabbok) river valleys, and the Jordan. He later traveled to 'Amman and along the Zarga River, via Ruseifeh. Of special interest are Albright's identifications and historical conclusions (Albright 1926: 89, 1932a: 10, 1933: 2, 1938: 50) and comments by Glueck (1937: 14).

Nelson Glueck Survey

The first ~~modern~~ survey in this region was that of Nelson Glueck, an American rabbi and scholar who included this region in his general survey of Transjordan conducted between 1932 and 1947. His survey of Ammon proper was undertaken during the summer of 1937 during which he documented at least 149 sites within ~~the~~ along the edges of the ancient Ammonite borders (1939: 151-251).

Two of the most significant results of Glueck's research were claims that the Ammonite region was occupied between ca. 1000 and 600 B.C. and that the Ammonites had constructed a line of fortifications called "megalithic towers" or *gum* unique to the Ammonites, along their borders as early as the 13th century B.C.

Petrie, Pape, and Kiralfy Survey

For a week or two after the 1938 season at Gaza Petrie, Pape and Kiralfy investigated the Ammonite ~~land~~ land. Actually, Petrie notes that it was Pape and Kiralfy who explored the countryside while he, Petrie, guarded the camp (Petrie 1952: 39). The sites were Petrie

Umm ad-Danar Survey

The Umm ad-Danar Survey, conducted in 1978 by P. McGovern, concentrated on a 52.5 ha. area on the northwest side of the Baq al-Valley, extending from Jabal al-Hawash and Jabal al-Qasr on the west to Ruqin al-Hayyat and Ruqin al-Hayyat on the east (McGovern 1980, 1987). Seven archaeological sites were documented within this relatively small area, six of which indicate occupation during the I and II periods of the Ammonites. One additional site dating from the Late Bronze Age and Iron Age I were also discovered. Two were excavated.

The Sahab Survey

Between August and September, 1983, M. Ibrahim directed a survey of a 192 square kilometer region around Tall Sahab. One hundred and thirty-one sites were recorded. While there was some evidence for Middle and Late Bronze Age occupation in the area, secondary periods during these periods was decidedly sparse. Occupation continued, however, during the Iron Age, especially at Zuhra al-Alva, Abu al-Hayyat, and ad-Dahsha, all of which served as secondary sites to Tall Sahab. A network of forts and lookout watchtowers seem to have been introduced at this time. The area seems to have been abandoned at the end of the Iron Age and was not occupied until the Ayudh-Mamluk period (Gustafson 1986: 283-80).

Madaba Plains Project Survey

The Madaba Plains Project, an outgrowth of the Hishan Project, began a regional survey within a 5 km radius of Tall al-'Umayyir, a key site located 10 km south of Amman, during the 1984 season. Additional survey work was carried out during the 1987 and 1989 seasons. To date, over 115 sites have been documented, nearly 75% of which indicate occupation during the time of the Ammonites (Iron I and II periods) (Gustafson *et al.* 1986; 1989; Belding 1989; 188; Yonker *et al.* 1990).

Ar Rumman Survey

From May 21 to June 18, 1985, Robert L. Gordon Jr. and Ernst Axel Knauf conducted an archaeological survey in the vicinity of Ar Rumman in conjunction with excavations of Abu Thawwab, a Pottery Neolithic and Early Bronze Age site (Gordon and Knauf 1987).

of almost all its contents. Archaeologists were, however, able to recover the head of an anthropomorphic column and a few sherds from the Iron Age (Albright 1932: 293-306).

'Amman Tomb A

For a number of years after World War II excavations in Amman were limited to municipal works and sewage digs, mostly of a sort necessitated by the steady growth of 'Amman, Transjordan's capital. The first of these salvage projects was the clearance of 'Amman Tomb A, discovered during digging of foundation trenches for a building on the north side of Jabal Jolai. The contents of the tomb were dated to the Iron II period and included pottery, a horse and rider clay figurine, a chess set with the inscription 'Belonging to 'Uzale' (Harding 1945: 67-74; Henschel-Simon 1945: 75-80).

'Amman Tomb B

A second tomb was found at about the same time. 'Amman Tomb B, on a wet edge of the hill immediately below 'Amman Tomb A (ibid.: 73-74), contained pottery that was dated to the eighth century B.C., as well as a rectangular marble palette, a limestone *khof* palette and a bone pin (Harding 1945: 74; Henschel-Simon 1945: 75-80).

Sahab Tomb B

A few years later, the police post in the village of Sahab notified the Department of Antiquities in Amman that another tomb had been discovered on the north-western edge of the village, which was found to contain architectural Sahab Tomb B, which was excavated by Hasan 'Awad al-Qasbi and reported by L. Harding, contained pottery and objects dated to the eight and seventh centuries B.C. (Harding 1948: 92-103; see comments by Dajani 1970: 29).

The Megabalein Tomb

Two years later, Assistant Inspector of the Department of Antiquities Ibrahim Abu Jaber discovered an Iron Age tomb in the village of Megabalein, a few kilometers south of Amman. It was cleared by L. Harding, who discovered a number of new Iron Age pottery forms, as well as a number of interesting objects, including another horse and rider figurine, weapons, jewelry, metal vessels, a mirror, etc. (Harding 1950: 44-48).

'Amman Tombs C

The Megalithon had been followed a short time later by the discovery of yet two more tombs at 'Amman, 'Amman Tombs C and D. 'Amman Tomb C was located about 5 m north of a Roman Tomb on Jabal 'Amman. The finds, which included pottery, jewelry, and a mosaic plate, washed from the Palestinian coast and clay figurine shaped as a hermaphrodite deity were dated to the eighth and seventh centuries BC. Harding 1951: 37-40.

'Amman Tomb D

The second tomb, 'Amman Tomb D, was found on the north slope of Jabal al-Qata'ah (Qat'atull). The tomb was completely looted but a number of pots were brought to the Department of Antiquities and a reconstruction of the tomb itself is given. Harding 1951: 37-40.

The pottery which was recovered suggests a date period of about 400 to 760 BC. see Dornemann 1983: 62.

The Adom Nur Tomb

The Adom Nur Tomb (later designated as 'Amman Tomb N by Dornemann) was discovered half way down the southern slope of Jabal Qayyali across from the Roman Theater. Based on pottery typology and iconography, the tomb was dated to the middle of the seventh century BC. A considerable number of objects were found in this tomb. These included jewelry, weapons, glass, alabaster vessels, three "Assyrian" clay collars, and 11 seals, one of which was inscribed with the name of the presumed owner of the tomb Adom Nur. Harding 1953: 48-75; Lufnell 1953: 66; Landes 1961: 78; Dornemann 1983: 17.

The 'Amman Airport Structure

In 1945 while the R.A.F. was expanding the aerodrome northeast of 'Amman, a bulldozer uncovered the foundations of a 16 m square building. L. Harding, who was recruited at the time very late as he was leaving to report for England, assisted a technical assistant Mohammed Saleh to conduct a salvage excavation. Harding 1948: 80. The layout of the structure as well as some of the finds indicated the building served as a temple. The artifacts found among the ruins were dated to the Late Bronze Age. Harding 1958: 10-12. Two additional excavations were later conducted at this site (see below).

The Dayr 'Alla Excavations

In 1961 Dr Heek Franken directed the German Expedition to Dayr 'Alla located near the mouth of the Zaqar River (about Jashok) in the Jordan Valley. Dayr 'Alla would seem to be outside the borders of Ammon as depicted in biblical literature. However, inscriptions and pottery from the Iron IIC period (sixth century B.C.) suggest that the site is prior, at least, to Dayr 'Alla had closer connections with the upland Ammonites to the east rather than with Israel to the west or Moab and Edom to the south (Franken 1961, 1962, 1964, 1969).

The most spectacular find at Dayr 'Alla was a ruined building (sanctuary?) of the ninth century B.C. with an inscribed plastered wall (the so-called Dayr 'Alla Plaster Texts) which read a prophecy of Azriel the son of Benai, an unknown descendant of the Benai (e.g. Numbers 22:2). Certainly a debate exists over whether the script and order are Aramaic or Ammonite (Amir 1970: 225). If the latter it would be the earliest Ammonite inscription. Franken's project should be credited for being one of the first multidisciplinary archaeological projects east of the Jordan (in the Kinneret District) (p. 10).

Al-Meqabalein Tombs

Although the details have not been published, A. 'Amir reports that a tomb in Al-Meqabalein (the second site) was excavated by the Department of Antiquities. The finds which are kept at the Jordan Museum include iron and bronze material, pottery, bones, and rings. According to 'Amir the material is similar to the Iron Age materials previously found in tombs at 'Anman and Sahab ('Amir 1973: 74).

'Anman Tomb I

Eleven additional Ammonite tombs were reported at 'Anman. 'Anman Tomb I and the Jashok Nazwa Tomb R (Dajani located 'Anman Tomb E) are the east of Jashok (Jolfeh) about 500 m. east of the Roman Theatre (Dajani 1969: 25-6). Over 100 iron and pottery vessels were recovered, most similar to those found in the other 'Anman tombs and Sahab Tomb B. Objects include: shells, marble, polishing stones, jewelry, one bronze nail, a bronze mirror, and a clay sherd. Based on the pottery and objects, Dajani dated the tomb to the eighth-seventh centuries B.C.

Jabal Nuzah Tomb

The Jabal Nuzha Tomb was found east of the UNRWA school, on the land of Hassan Tashlev. One hundred and sixty pieces were recovered from this tomb which Dajani dated to between 1300 and 1150 B.C. (Dajani 1966: 48, 49). More recent analysis, based upon an interest in other comparative material, has led Dornemann to suggest a lower date in the Iron I period (Dajani 1966: 48; Dornemann 1985: 31). Nevertheless, this tomb provides important evidence of the earlier period of Ammonite occupation.

Hennessy Excavations of 'Amman Airport Structure

Also in 1966, J.B. Hennessy conducted an additional excavation at the 'Amman Airport structure in hopes of clarifying the stratigraphic picture, the functional phases, and the relationship of the "temple" to possible associated remains. Hennessy was able to discern the building stages and to refer the date of construction to a B II period, ca. 1300 B.C. (Hennessy 1966a, 1966b). Of special interest was the occurrence of Mycenaean pottery (Hinkley 1966: 10).

'Amman Citadel Excavations

In May, October, and September of 1968 several small excavations were conducted at the 'Amman Citadel (Jabal al-Qal'a'), the site of ancient Rabbath-Ammon, capital of the Ammonites, now located in the heart of modern 'Amman. Excavations of the wall were directed by E. Zavadne. Most of the surface remains were from the Hellenistic and Roman periods, although four double-arched subterranean passages of the Ammonite period were found in section, some in a poor trench. Strayed pottery from the ninth to sixth centuries B.C. and a few Iron II ostraca were also found (Zavadne 1968: 27-28).

Rudy Dornemann, Ida Suliman, and Fawzi Fakharani co-directed additional probes in Area IV-VII on the south side of Citadel Hill in September of 1968. Although none of the walls excavated in this area could be securely dated, large quantities of sherds from Iron II were recovered. Dornemann continued his investigations on the north side of the hill in Areas I-III. Here he was able to recover several stretches of the ninth century B.C. outer fortification wall along with other finds (Dornemann 1983: 89-10).

Tall Hisban Excavations

In July, 1968, S. Horn with R. Boras launched the Andrews University Expedition to Hisban. After the 1971 and 1973 seasons, L. Geraty

look over as caretaker during the project through two more field seasons in 1974 and 1976. Excavations revealed occupation in Iron I and Iron II (Gertzel 1977: 383). Tel Hishan was probably inside the Ammonite sphere of influence during the earlier part of its existence (Iron I period), but best textual data and inscriptions excavated recovered from the site indicate that the southern site was in Ammonite hands during the Iron II period (Yammar 1981: 6; Cross 1978; but see Habner 1988 and Kleber 1991).

The Hishan expedition is also notable for being the first major American multidisciplinary project in Jordan employing archaeologists, specialists, and conducting a number of additional projects in conjunction with the dig including a regional survey, environmental survey, paleobotanical research, zooarchaeological research, ethnoarchaeological research, and a food system survey (see King 1983: 193; LaBianca 1988b).

A new phase of excavations were initiated by LaBianca and Ray in 1996 (Yonker *et al.* 1997). Subsequent seasons were undertaken in 1997 and 1998. The major focus of these new excavations is an Iron Age mound.

Raqm al-Malfuf Excavation

The first archaeologically excavated one of the so-called Ammonite towers was built by R. Boraas (1970 at Raqm al-Malfuf North (Boraas 1971). Surprisingly, the soundings indicated occupation earlier than the Roman period (based on *terra sigillata* ware—first century B.C. to second century A.D.). This finding was quite surprising to those who assumed these were part of a fortified Ammonite defense system from the Iron I period. Acknowledging the "non-Roman" look of the architecture," Boraas suggested two possible explanations: (1) the Romans cleared in a "most thorough" fashion, and used a previously existing structure—presumably from the Iron Age; (2) or less skilled, local workers were used to construct these so-called structures in Roman times (Boraas 1971: 45).

However, Khar Yassine reports that Langer de Polachy, on behalf of the Dept. of Antiquities of Jordan returned to Raqm al-Malfuf North where Boraas and originally found stratified down to earlier than the Roman period. New probes by de Polachy found sixth century B.C. ceramics from the lowest levels of the tower (Yassine 1988: 47; see also Shea 1981: 109). Thus, this structure may be classified as Ammonite, but from a later period.

Sahab Tomb C

In 1970 Dajani published an article on the excavation of a third tomb at Sahab (Sahab Tomb C) (Dajani 1970: 20-31; Dajani 1983: 38). As with Sahab Tomb B, this new tomb was reported to the Department of Antiquities by the local police. The earliest pottery was dated to the 14th century B.C. when remains from the Iron I and Iron II late and early B.C. were also recovered. Pottery types include imported and imitation Mycenaean wares. Objects of interest included two ostrich eggs, the first Late Bronze Age tomb in the Amman region to be found.

Khirbat al-Hajar Excavation

Archaeological evidence for an Iron Age dating of the site at Khirbat al-Hajar was revealed in 1972 when H.O. Thompson excavated a small fort strategically located in the SW of Amman known as Khirbat al-Hajar. Excavation revealed that the site was first occupied in the Iron I period (13th-10th centuries B.C.), abandoned for approximately 300 years and then reoccupied in the Iron II (seventh-sixth centuries B.C.). During the latter period a small circular tower and a rectangular wall were constructed (Thompson 1972: 197). This provided the first excavated evidence of an Iron Age site for the towers, albeit in the Iron II rather than Iron I.

Rujm al-Mudaf South Excavation

Later in the same year Thompson excavated Rujm al-Mudaf South (a circular fortified structure with a diameter of about 3 m) (Thompson 1973). Again, this site showed evidence of occupation as early as the Iron I, although the tower was not built until the Iron II period (during the seventh and sixth centuries B.C.) (Dajani 1980).

Tall Siran Excavation

Also in 1972 H.O. Thompson, on the occasion of a campaign at Tall Siran (excavated on the campus of the University of Jordan) a few kilometers northwest of downtown Amman. Although the site had been badly eroded, a number of ceramics were collected which contained material from the period of the Ammonites. The most notable find was a bronze bottle containing grain and bearing the inscription of an Ammonite inscription to be found. Although there is some controversy over the precise date of the inscription and the identity of

the bottle it does mention two Amminadabhs who each rode a king over the Ammonites (Thompson 1973).

Tall Sahab Excavation

In yet another project begun in 1972 Ibrahim conducted excavations at Sahab, the ruined town about 2 km southeast of 'Amman, which was already noted for its Iron Age finds. Remains from the Early Bronze and Late Bronze Ages were recovered from the site, as well as occupation levels from Level II. Of special significance is the evidence for cultural continuity between the Late Bronze and Iron I periods since this is the period when the Ammonites emerged in the area. Also of interest was the recovery of a large number of sherds and pottery finds which may have previously been ascribed as either markers of the neighbouring Issa'ites or the ban Ammonites (Ibrahim 1972, 1974).

Miqabatein Cave Excavation

In June of 1974 A. Amm excavated a cave in the ruins of Miqabatein, a few kilometers south of 'Amman. Many of the sherds dated to the Iron Age, when the Ammonites were at their Zenith (about 600 B.C.). Amm also discovered two magnificent wall-towers which were among the most structures still to be seen from the Iron I Age. The ruins were discovered by the Jordanian Department of Antiquities in 1961. Amm (1973) and his team with Harding reported (1970) being the first of Miqabatein to be seen.

Rupn al-Mekhezzi Excavation

Continuing his work on Ammonite towers, Thompson excavated Rupn al-Mekhezzi in 1975 located NE of 'Amman. His structure was square (12.2 x 12.25 m) rather than round, although Thompson still interpreted it as an Ammonite tower. As with the other sites, sherd evidence indicated a possible Iron I occupation in the area although the structure itself was not constructed until the seventh or sixth centuries B.C. (Thompson 1984).

'Amman Airport Structure Excavation (1976)

Because of persisting curiosity about the function of the 'Amman Airport Structure, I Heri decided to conduct a additional surveys

in 1976. He noted that paucity of domestic artifacts and the presence of human bones as well as the presence of a possible cremation pyre (Herr 1976: 1983a: 983). He suggested that this structure served as a mortuary structure, based on certain historical and archaeological considerations. Herr suggested that it may have served the Hittites as a crematorium (Herr 1976).

Tall Mazar Excavation

In 1977 K. Yassine initiated four seasons (1977-80) of excavations at Tall Mazar in the Jordan Valley. The excavations were conducted on both the main tell and an associated subsidiary cemetery area. On the tell, architectural remains were found in five strata which dated from the eighth to the fourth centuries B.C.E. The central feature of each stratum consisted of a large public building of some sort. Generally these buildings appear to have served as residences of important officials, perhaps the governors.

Four hundred meters northwest of the tell was a 1.20 ha square mound which was occupied during the 11th/12th centuries B.C.E. The central feature of this period was a large "open court sanctuary." After this sanctuary was destroyed toward the end of the tenth century the area was abandoned until the fifth century when it was used as a cemetery. At least 80 graves have been excavated. These graves date from the Iron II period but, prominently, a variety of suggestions that Tall Mazar was under Ammonite control during this time (Yassine 1982: 1983b: 1984: 1985).

Tall Abu Nsar Excavation

In 1983 Khald Abu Ghannouch of the Department of Antiquities of Jordan supervised the excavation of Tall Abu Nsar, located 4 km north of Sweleh overlooking the Baqara Valley. The brief published report indicates that two square towers were located on the site along with a large north-south wall, some cists, two wells which were excavated and dated to the eighth-seventh centuries B.C.E., and a winged impression dated to the Byzantine period. Stratigraphic excavation of the western tower indicated that it was built on bedrock sometime during the eighth/seventh centuries B.C.E. (Abu Ghannouch 1984: 405).

Tall Safut Excavation

In 1982 D. Wimmer commenced excavations at Tall Safut, 12 km NW of downtown Amman. In addition to a Middle Bronze Age

gate. Wimmer has uncovered Middle Bronze and Late Bronze pottery, an I B sector wall around the perimeter of the site, and Iron I and II levels. Of special interest is the apparent smelting installation from the Late Bronze to Iron I periods with no destruction level evident. Other finds of interest include a bronze and gold figurine, possibly a tutelary deity, a non-military sword, and a Late Babylonian seal impression (Wimmer 1987a; 1987b). Work at Safat has continued into the 1990's under the direction of Wimmer.

The Umm Udhayna Tomb

Also in 1985, an Ammonite tomb was discovered at Umm Udhayna just east of the Amra Plateau in Amman and about 100 m south-west of Ruqn Umm Udhayna, an Ammonite round tower. Hilda Haddad excavated the tomb under the direction of A. Hadidi. Numerous finds dating from the eighth to the fourth centuries B.C. were recovered. These finds included metal vessels and bronze jewelry including rings, earrings, bronze mirrors and boxes, bronze fibulae, a bronze carabac, a seal of an Ammonite, a sealed jar, a Mycenaean (ibid. 1985), iron swords, daggers, and arrowheads, pottery and at least 15 skeletons. Haddad assumed that the tomb originally belonged to one of the Ammonite ruling arches (Haddad 1987).

Jabal Akhdar Excavation

In 1983 the Department of Antiquities, under the supervision of Fawzi Zayad, Hilda Haddad and Fayssal Yassine, excavated a rectangular fortified structure 35 m in diameter on Jabal Akhdar, immediately south of Jabal 'Arnun (Zayad 1982: 5). Khouri (1988: 23) Strategically, excavation indicated that the structure was originally built in Iron II, or the seventh centuries B.C., although it has been reused in Hellenistic, Late Roman and later times. Because of its megastatic construction, strategic location and date, the excavators designated the original structure as an "Ammonite tower" (ibid.).

Khilda Fortress A Sondages

Although still unpublished, Jim Sauer conducted some brief sondages west of Amman, at a site known as Khilda Fortress A, a rectangular tower structure measuring 14 x 11 meters. The ceramic evidence indicates a seventh century B.C. date for the founding of the fortress (Yassine 1988: 17; Khouri 1988: 23). Excavations of two tombs near Khilda A by Khair Yassine also support an initial Iron II occupation

of the site which extended into the Persian period (Yassine 1986: 1–3).

Tall al-ʿUmayri Excavation

In 1984 J. L. Garay, J. G. Herr and O. S. LaBianca launched the Madaba Plains Project. The author as co-director joined them in 1990 to act as the survey director; above this project undertook excavations at Tall al-ʿUmayri under the direction of J. Herr. Seven seasons of excavations (1991, 1993, 1999, 2002, 2004, 2006, 2008) to five fields have produced stratified remains from the Early Bronze III–IV, Middle Bronze II, Late Bronze I, Iron I and II periods. The most significant finds from these periods include an EB IV domestic complex with iron I floor-foundation system, the agricultural lampstand and cisternic wall, and an Iron II cistern. A sixth-century BC cistern located in the area of the citadel. Another seal carries the cuneiform of the pharaoh Shalmaneser III although it dates from a time well after his reign; although numerous other finds have been recorded as well. Recent work on the Iron I ceramics suggests that the site may have been occupied by the Rammites before, although the site clearly was abandoned during Iron II (Garay 2003, Garay *et al.* 1997, 1998, 1999, 2000, Herr *et al.* 1990, Herr *et al.* 1996, Yonker *et al.* 1990, Yonker *et al.* 1996, Yonker *et al.* 1999, Yonker *et al.* 1997). The discovery of a Late Bronze Age building in 1996 has raised the possibility of Ammonite occupation. Herr proposed cisternic construction.

Rajm Salim Excavation

In 1965 Lorna Herbert and J. Herr excavated Rajm Salim in connection with the Madaba Plains Project. Located on a bedrock outcropping overlooking rich agricultural lands, the site was apparently an agricultural (instead of mining) site. Iron II Persian period coins and cupmarks were found in the immediate vicinity (Garay, Herr and LaBianca 1988).

New Excavations at 'Amman Citadel

A partial execution of the Department of Antiquities and the Ecole Biblique was conducted by F. Zayadine, J.-B. Humbert and M. Najar in July 1988 to survey the water system on the north side of the Amman Citadel and to expand excavations on the Lower Terrace begun in 1968 and 1973. This team concluded that the cistern was

part of the water system of the "Ammonite Iron Age period or earlier." The Lower Terrace excavations uncovered what the excavators believed to be the courtyard of an "official building" of the Ammonite period, along with several adjacent structures, and a stretch of a wall, which runs along the inside of the city wall. An Ammonite clay figurine bearing the *alef* crown was found in this area. Additional structures were also uncovered, including a large circular structure, which may be a good example of Iron II red burnished pottery figurines, and Phoenician-styled blue glass vessels (Zayadine *et al.* 1989).

Tall Jawa South Excavations

In 1989 R.W. Younker and M. Daviau began excavations at Tall Jawa south. Work continued in the summer of several seasons under the direction of M. Daviau (1992, 1993, 1994, 1996). This site was apparently an important Ammonite city during Iron Age II. Excavations revealed occupational levels from the Iron I and especially Iron II periods, including a city wall, houses inside a casemate wall (discussed more fully in this volume below). Numerous Iron II pottery objects were found in two houses. A small ceramic figurine of a crowned, bearded male evokes the limestone busts found in Amman. The figure is generally understood to depict Ammonite kings. Subsequent seasons uncovered a possible Iron II chambered cistern, and an important late Iron II building, perhaps a government building. The city was destroyed during the late Iron II, perhaps during the early sixth century B.C. Numerous iron weapons and even pikes were found in the destruction debris (Younker *et al.* 1990).

Tall al-Drejat Excavation

In the same season R.W. Younker and Linda H. Howard conducted a single season of excavation at al-Drejat, a possible Ammonite fort located southwest of Umm al-Jawr. The site is strategically located on a high hill with an excellent view in all directions. Excavations revealed a large rectangular structure, part of that megacity. The site was apparently built originally during the late Iron II period but was raised and remodeled in later periods (Younker *et al.* 1990).

Tall Nuriin Excavation

Also in 1989 David McCreery and James Flanagan began excavations at Tall Nuriin, west of Amman. Pre-excavation surveys conducted yielded approximately 41,000 sherds from Early Bronze IV,

Middle Bronze, Late Bronze,² Iron I, Iron II and later periods. Excavation from the 1989 and 1990 seasons penetrated Middle Bronze and substantial Iron II occupation levels (Flanagan and McCreery 1990; De Vries 1991: 26; Flanagan, McCreery and Yassier 1992). Excavations continued during 1991 and revealed a further 150 years of Iron Age occupation/activity, dating from the tenth century to the sixth century B.C. Remains from the Persian period were also found (Flanagan, McCreery and Yassier 1994). The 1991 seasons uncovered an additional Iron I phase, Iron III (Flanagan, McCreery and Yassier 1996). Nothing concerning the ethnic or political identity of the Iron Age occupants has yet been reported.

Khirbat Salameh Excavation

The first survey of the site appears to have been that of Muqahed Muhsein in 1976 (report on file with Department of Antiquities, see Lenzen and McQuinn 1987: 201, n. 4). The site was surveyed again in 1983 by Lenzen and McQuinn (1984: 295; 1987: 201). The survey noted simply a structure approximately 20 × 20 m with pottery dating from the Hellenistic to the Roman periods.

In 1984 limited excavations were conducted by Lenzen and McQuinn in two areas I and II (Lenzen and McQuinn 1987: 201). They reported a layer of debris was reached which contained a large number of animal bones and fishbones from the sixth to centuries B.C.

This picture was modified in 1992 when more extensive excavations of Khirbat Salameh were initiated by Pierre Bikai, director of the American Center of Oriental Research. Some earlier walls were found which appear to date to the Iron II period, possibly toward the end of the Assyrian period (Bikai 1993: 521, 526).

Bikai interprets the Iron II Age structure as the central feature of an irrigated site whose fortunes ebbed and flowed with the larger regional economic picture. Bikai suggests that the increase of farmsteads around 'Amman during the later part of the Iron II Age was the result of disruption of normal trade routes through the Persian Gulf and the use of alternate routes through Transjordan, but led to temporary economic expansion in the region around 'Amman (ibid).

Tall Jalul Excavation

In 1992 Randall Younker and David Merling initiated excavations at Tall Jalul in conjunction with the Madaba Plains Project (Younker

et al. 1993; Younker *et al.* 1996; Younker *et al.* 1997). Additional seasons were undertaken in 1994 and 1996. To date, occupational archaeological remains have been recovered from the fifth to fourth centuries Iron I to Persian period. The most significant archaeological remains include a stretch of Iron I wall (Field C) at least four phases of an approach ramp and water cisterns on the north side of the wall which date to Iron II ninth-eighth centuries B.C.E., several burials from Iron II seventh-sixth centuries B.C. including parts of some domestic buildings, a pillared building, and a tripartite building. Some architectural remains date to the Persian period (Field C). Several typical Ammonite figurines (e.g. birds and ride figurines) and Ammonite seals dating from the seventh-sixth centuries have also been found, suggesting that the border of Ammon extended at least this far south during this period.

Wadi el-Zarqa/Wadi el-Dus: Excavations and Survey

The Wadi el-Zarqa/Wadi el-Dus Project was inaugurated in October 1993 (Palaumbo *et al.* 1996). Among the sites surveyed were at least nine Iron II sites, including Khirbat al-Jamus and Tall al-Bad. The latter site is the only one in the region. Its size and position (location overlooking the Zarqa River) suggests that it may have played an important role in controlling trade between the Jordan Valley and the eastern fringes of the Ammonite kingdom.

EXCERPTS

SALIENT FEATURES OF IRON AGE TRIBAL KINGDOMS

Oystein LaBianca

Much recent scholarship has been devoted to trying to grasp and describe the distinguishing characteristics of the social organization of the ancient Iron Age kingdoms of the Southern Levant, such as the Israelites, the Amorites, the Moabites and the Edomites (Frick 1981; Gertzel 1979; Herr 1983; others). Recently, as LaBianca and Younker (1995; Younker 1997c) have argued, that a fundamental

ature of their social organization was that they never passed to be essentially kin-based or tribal. Our point was to argue that despite the emergence of kings in these societies, and the reference to them as kingdoms, these were fundamentally tribal societies or tribal kingdoms.

What specifically do we mean by this? In our previous article we explained the capacity of tribal ideology to accommodate both sedentary and nomadic types of livelihoods. We also showed how tribal ideology could operate at the super-regional level of kings and kingdoms. In the following few paragraphs I would like to take the argument a bit further by pointing out the archaisms characterizing the salient features of such tribal kingdoms.

One of their tribal social structure was a relatively locked-in way of obtaining food. The peoples who made the kingdoms of Israel, Aram, Moab, the Edom were by and large hunter-gathering, stockherds and herders and farmers. Throughout their histories, the extent to which one or the other of these two pursuits were emphasized by a given community or cluster of tribes was determined by local climatic and landscape conditions and by changing opportunities for mobility and trade in the regional area. The organizational principle that permitted adaptation to either the direction of pastoral or agricultural pursuits was tribalism, an ideology based on the idea of contact seen from a common ancestor with possibilities of reuniting kinship communities back and forth between herds and agricultural pursuits at the level of ethnic subdivision, kinship groups or households or even individuals.

There is to be sure a very considerable and not trivial degree of agricultural activities. The economic pursuits of this people were concentrated on herding production of oxen and horses, on the production of wool and milk on the land by means of agriculture, husbandry of sheep and goats. While herds of sheep and goats were more to be found in these pursuits co-existed in the same villages and herds of camels, the production represented by nomadic pursuit would vary considerably from one village to the next. This pursuit might also vary considerably within a particular village or region.

There were many traditions were based on genealogy, genealogies. By means of manipulation of genealogical stories, individuals and households were able to interact with named groups and sections within larger tribes. Such genealogical genealogy permitted a

villages and households as well as larger social units to split, subdivide, or coalesce, depending on economic opportunities or obstacles arising within a given social unit. Given sufficient external threat it also permitted coalescing of tribes into supra-tribal clusters or chiefdoms.

Earlier pre-state chiefdom social structure was not extinguished by the rise of kings. When the rise of kings involved the reduction of a transient, supra-tribal level of authority centralized on it did not extinguish the pre-machal chiefdom social order. Instead they co-existed, connected itself to the new supra-tribal monarchic order. Such accommodation was facilitated in part by the mechanism of generative genealogies which allowed tribes of descent in order to be increasingly wide-ranging hosts of cooperative and assistance. The persistence of the tribal order is reflected in part by the continued association of particular tribes with their traditional lands throughout the period. It was also reflected in residential proximity of kindred and patterns of cooperation and conflict throughout the period.

Even though the rise of supra-tribal polities did not produce division of society into two parts as was the case in Egypt and Mesopotamia, the rise of supra-tribal polities in the form of centralized states led to a division of society into two realms: urban and rural. This division of society occurred in the Iron Age kingdoms of the Southern Levant. When a nascent form of such division may have emerged in the Late Bronze Age, it was by no means as well defined as found in Egypt and Mesopotamia. To be exact, it did occur, it could have been in the Late Bronze Age. Transition. This is because the division of society into two realms by urban and rural was a risk of coalescence. Coalescence did not occur in Egypt or the Levant or elsewhere.

Secondly, the rise of supra-tribal polities did not produce a division of society into two realms. Administration of kindred or tribal territories was carried out through towns, usually consisting of a cluster of administrative buildings located in the center of some settlement surrounded by one or more walls and protected by a moat and entered by gates. In every region, such large towns had an administrative bureaucracy consisting of a cadre of bureaucrats whose role it was to administer the economic affairs of the surrounding tribal territories. The existence and extent of power of such bureaucrats at the local level

from the *status* of instruments of delegated power, such as *status* seals and related artifacts.

Several mass people lived in the rural hinterland beyond the towns. As the early *axes* of most indigenous of these ancient kingdoms were caught up in activities related to the quest for food, people lived in small villages and hamlets surrounded by agricultural fields and pastures. Villages and hamlets consist of various configurations of *houses*, *axes*, and *fields*, depending on the conditions of production in various geographical regions. As a general rule, the more risky these food production conditions were, whether due to the vicissitudes of climate and/or politics, the greater the tendency of rural settlement patterns to be of sedentarization and nonurbanization, apart generally to have been more pronounced in *axes* such as that in *Uruk*. In Transjordan, such cycles became more pronounced as one moves southward, from Amman to Maab to Jordan.

High is the presence of hierarchical power structures. Power relations within early of these Iron Age tribal kingdoms are best described as being somewhat *tribal* than *ranked* within some *tribal* hierarchy. Thus it was possible for there to be several *tribal* centers of gravity within each kingdom, each center being a power center. There is particularly so in the example of *Uruk*, which may be particularly powerful because of its location on the junction of water and *tribal* *tribal* highways. *Uruk* may have its power of being a processing and distribution center for certain agricultural products. A second may have its power in being the *tribal* center in particular regions, such as *tribal*. Such structures stand in sharp contrast to the *tribal* hierarchies associated with the *tribal* societies of Egypt and Mesopotamia. They also are more consonant with the *tribal* ideals of tribal societies.

Now is the presence of overlapping territories. Consistent with the existence of hierarchical power structures would be overlapping territorial units. The boundaries separating different local *tribal* units would not be described as *tribal* and *tribal* rather than *tribal* and *tribal*. The reason for this is that the economic activities engaged in by one group may be such that they can easily be carried out by another. For example, one *tribal* may be primarily pastoral, another primarily agricultural, and both would stand to benefit from the one oversteering the other as pasture lands belonging to one group would be allowed to graze on the *tribal* fields claimed by another.

100, is the maintenance of militias. A cadre of trained soldiers was maintained in order to protect the interests of each tribal kingdom. These soldiers relied on herds of camels or horses and carried part of their armaments of warfare.

† JAP, JPA, JPP

In these student features, others will no doubt soon be added. The intent of course is to stimulate classroom and field research, to seek confirm or reject any or all of their hypotheses in order to replace each hypothesis with a better one.

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CHAPTER TWO

AMMONITE TERRITORY AND SITES

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Introduction

Information on Ammonite territory, boundaries, and sites comes from two sources, namely the biblical and epigraphic material and archaeology. The biblical information, as we shall see, is not a seamless garment. The epigraphic material, though meagre, is nonetheless valuable. The archaeological information is open to question as the position of various commentators makes clear. The researcher can nevertheless develop a hypothesis that describes the Ammonite

The Biblical Data

The information that the Bible provides on the Ammonite "holy land" is in the context of Israelite territorial possessions and interests east of the Jordan River. Since this information is from an Israelite point of view, we ought not to expect that it be either complete or sympathetic to the Ammonites. The biblical writers will thus, present what they know about Ammonite territorial possessions from an Israelite perspective. In other words, they will have an Israelite agenda. Thus, the biblical information that is relevant for the present purposes will be both partial and biased as far as Ammonite territory is concerned.

Numbers 21:24, Deut 3:16, and Josh 12:2 state that the Ammonite territory is at the Jabbok. Wadi az-Zarqa, while Deut 2:37 indicates that the land of the Ammonites is in the upper region of the Jabbok and associated hill country where its cities are located (2:26). The boundary of the Ammonites is said to be strong (Num. 21:24, NRSV).¹ Rabbah, "the royal city" (2 Sam 12:26) would lay

four or five of these towns. Arzer, Melaath and Vadderanum were other Ammonite towns (Judg 11:33).

Deut 2:18-19 provides very general information on the Ammonite "homeland" when it states that after the Israelites cross over the boundary of Moab at Ar they will approach the territory of the Ammonites. This text indicates that the territory of the Ammonites is located north of that of Moab (that is north of the Arnon/Wadi al-Mujib) (Num 21:13-15:36).

Judg 11:13 part of the Jephthah narrative (Judg 10:6-12) is more specific relative to Ammonite territorial possession when it states that the Ammonites considered their land to extend "from the Arnon to the Jabbok and to the Jordan." This is the region which is referred to today as *al-Balqa* (the Belqa) (Geraty and Running 1989:3). It is about 15 km from the Arnon to the Jabbok, by about 35 km from the Jordan River to the desert.

The former inhabitants of the land of the Ammonites were the Rephaim but the Lord (Yahweh, the God of the Israelites) destroyed the Rephaim before the Ammonites so that they could possess both the settled and then place (Deut 2:2). The Ammonites called the Rephaim "Zamzumim" (Deut 2:20).

The biblical writers express two attitudes relative to Ammonite territorial possessions: 1) the book of Numbers states that the reason why the Israelites did not conquer Ammonite land is because the boundary of the Ammonites was strong (21:24); and 2) the Deuteronomist states that the reason why the Israelites did not take possession of Ammonite land was because the Lord had given that land to the descendants of Lot (Deut 2:19; see also 2:21).

The territory of the Ammonites whatever its boundaries and extent was not a static entity. There are indications that the Ammonites were an aggressive people who sought to enlarge their holdings.

Judges 3:12-13 states that King Eglon of Moab, in alliance with the Ammonites and the Amalekites, attacked and defeated Israel and

The location of Ar of Moab is unknown. Karak Rashiya south of Wadi al-Mujib, Karak al-Mu'alla, M.R. 244853, M. 244854 or Wadi al-Mujib, and Khubay al-Bah' M.R. 244855 are among the sites which have been identified as its location (Mattingly 1992a:321). In Deut 2:9 however Ar appears to be a synonym for Moab.

It ought to be noted that the same reason is given as to why the Israelites did not take possession of either Ar or Moab territory (Deut 2:9). See Gen 19:30-38 on the escape of the Moabites and the Ammonites.

then took possession of the city of palms, that is, Jericho (Deut 34:3). The Amalekites, nomads of southern Palestine, are certainly out of place in the narrative (de Vaux 1973: 118). It is possible that the Ammonites were involved with Moab in this matter. De Vaux thinks, however, that the association of Ammonites with Moab here may be redactional (1973: 118).

In the introduction to the Jephthah story (Judg 10:6-12:7), the Ammonites are said to have "crushed and oppressed the Israelites that were beyond the Jordan in the land of the Ammonites which is in Gilead" (Judg 10:8).³ This oppression extended north of the Jabbok to Jabbesh-gilead (Judg 11:7) which is generally associated with Wadi al-Yabis.⁴ The Ammonites are moreover, said to have "crossed the Jordan to fight against Judah and against Benjamin and against the house of Ephraim" (Judg 10:9). Finally, according to 1 Sam 11:27-11:11, Nahash king of the Ammonites oppressed the Gadites and the Reubenites living beyond the Jordan and besieged Jabbesh-gilead (1 Sam 11:1-2). Thus, there are indications of competition on the part of the Ammonites on the one hand, and Israelite tribes, on the other, for territory, especially east of the Jordan River. Moreover, the narratives in question express the biblical view that the Ammonites took opportunities to expand their territorial holdings.

Judges 11 records the account of Jephthah's battle with the Ammonites (Judg 10:6-12:7) by stating that he inflicted a massive defeat on them from Aroer to the north, north of Mt. Gilead, twenty towns, and as far as Abel-keramim. So the Ammonites were subdued before the people of Israel. The passage provides information on three Ammonite sites, namely, Aroer, Minnith, and Abel-keramim. It also makes the very general statement that Jephthah defeated "twenty towns" of the Ammonites. Aroer, Minnith, and Abel-keramim are probably intended to be numbered among these twenty towns.

Judg 11:33 does not indicate the direction in which Jephthah was

³ The term "Ammonite" is a general rather than a specific designation for the pre-Israelite inhabitants of the land. The terms "Canaanite" and "Amorite" occur in the Old Testament with the same meaning (Nah 1:9b: 141 n. 1, 152; see also Soc. and Script. 1973: 100).

⁴ Jabbesh-gilead is invariably located north of the Jabbok and in association with Wadi al-Yabis. Tall al-Munath, together with its twin site Tall al-Mughherah and Tall al-Maqbil, are the most obvious archaeological sites in the region (Gibson 1964: 10; Rawlinson 1870: 10; Albright 1957: 285; Lemaire 1966: 14-15).

traveling when he is said to have defeated the Ammonites. Therefore, we do not know if the sites named are listed in any particular direction of the compass. It is partially for this reason that *Arzer*, *Minnith*, and *Abel-keramum* cannot be identified with any confidence. Despite this fact, they are generally placed in the district to the west of Amman (Aviaron 1979: 203; Bubing 1975: 208) and tentatively identified, as will be indicated below, with a variety of present-day archaeological remains. Such attempts are, however, precarious since it is not known if the text in question dates to the Iron I or Iron II period.

The toponym "*Arzer*" means "juniper" (Kortler and Battinger 1988: 73; Rowley 1970: 1). Such is of little assistance in locating the site since trees of this species are found throughout central Transjordan.

The *Arzer* in question here is not the one on the edge of Wadi Arnon, contrary to the position of Gureck (1959: 21, 41). It is rather the *Arzer* which is eastward facing—depending on the orientation. *Rabbah* (that is, *Rabbath Ammon*; Josh. 3:2). Although it cannot be definitely located, a number of commentators have proposed suggestions.

Abel (1967: II, 250) locates *Arzer* northwest of Amman at *Asghar* or 7 km east of the capital city at Khirbat as-Safra. Several commentators place it at Khirbat al-Beder (map coordinates 234/136.6) about 3 km north of the Amman Citadel (Munoz 1962: 970; de Vaux 1973: 124–26; Hubner 1992: 133, 135 [with a question mark]; Ahlstrom 1993: 407–08). Other places proposed for its location include Khirbat as-Samsani, As-Samsanih (Kallai 1986: 252, n. 593) or As-Sawwina, As-Sawwanih (Gureck 1959: 23; Simons 1959: 120, 299), probably correct when he states that its location is unknown.

Relative to the location of *Minnith*, Eusebius knew of a place called *Minnith* four miles from Esbus—Heshbon—on the way to Philadelphia (*Ammon* 152.1–2). De Saury (833) proposed *Umm al-Qenafil* located on a high hill at the beginning of Wadi Hishia. However, Schutze (followed by Ilavci 1981: 4) was convinced from I and Iron II Persian sherds at the site (and Yonker 1992: 842), opt for *Umm al-Hanafish/Umm al-Basatin* (map coordinates 232/137), ca. 6 km to the northeast of Heshbon at the intersection of an ancient route for the location of *Minnith*. Most scholars think that the site cannot be identified (Simons 1959: 299; Ohlsson 1969: 172; de Vaux 1973: 126; Hubner 1992: 135–36).

The toponym *Abel-keramum* means literally "pasture/meadow of

the vineyards (Gen 40:12–13; 1 Rowley 1970: 1) and would thus seem to refer to a place where vines were cultivated. Such a designation is too general, however, to help in its precise location since vines can be grown in a number of areas in the central Transjordanian plateau.

Eusebius locates Abel-kerammim about six to seven Roman miles from Philadelphia at a place called *Ibela* (*Onom.* 32.15). A site by this name is presently unknown in the area.

Abel-kerammim is sometimes located in a general fashion in the city district of the northern Jebel Barka. Sjöström (1990: 299; Östergren 1997: 17) attempts to determine precise results in the case of Na'at (map coordinates 22°57'132" N, 36°57'11" E; 7–23–11; Nelson 1979: 47) with a question mark, near Na'at Redford (1982: 10) or Khirbat as-Suq Ali (1990: 112 n. 2), all on the way from Philadelphia to Heshbon, as candidates for its location. Mittmann (1969: 75), de Vaux (1973: 126), and Ahlström (1993: 408) identify it with Kom Yajuz, 3.5 km north of Khirbat al-Beder, which, as indicated previously, they connect with Amur. There is, however, no archaeological support for this latter identification. Recent archaeological findings have led to the identification of Abel-kerammim with Tall al-'Ammari (Reed 1982) and al-Sahay (Khalil 1983; Khalil 1987: 1; Höner 1992: 132–33, 141, with a question mark) and Tall Jawa (South; Younker 1997). It can thus be concluded that the site cannot at present be identified with any certainty.

There are a number of other biblical references to Ammonite sites: 1) Jazer (Num 21:24; 1 Mac 3:2; RSV; Jer 40:1; Josh 3:25; 2 Sam 17:1; *et passim*); 2) Rabbath ammon (2 Chr 28:18; 2 Sam 2:26); 3) "the water city" (2 Sam 12:17); 4) Ai (Jer 49:3); and 5) Heshbon (Jer 49:3).

Jazer and its villages are said to be Ammonite (Num 21:32–32:1; 1 Chr 6:81; Josh 13:24; 21:39; 2 Sam 24:3–4; 1 Chr 6:81; Malabre 1981: 8–10; Jer 48:32) and Ammonite (1 Macc 5:8; Reed 1982). Jazer as an Ammonite site, the NAB and NJB translation of Num 21:24 indicates that this site marked the Ammonite boundary/territory. The NRSV and RSV, however, translate the text as "for the boundary of the Ammonites was strong" and "where the territory became difficult" respectively. If the translation is correct, the site would have been at least for a time in Ammonite territory. Moreover, Josephus associates the city of Jazer with the Ammonites during the time of the Maccabean Wars (*Ant.* 12:309).

Jazer is said to be in Gilead (1 Chr 26:31). This does not help greatly in locating the site since the region of Gilead included territory both north and south of Wadi Jabbok (Deut 3:12-13; see Simons 1959: 28; Abel 1967: 176; Ottosson 1969: 83; 199: 1020; Ray 1974: 219; Aharoni 1979: 37). Similarly the association of the site with the Ammonites, the Gadites, and the Moabites is not of great help in its location. While the areas that these groups were inhabitated can be indicated in a general manner, their precise boundaries are uncertain.

Eusebius places Jazer ten Roman miles west of Philadelphia, 15 from Hesboun and at the source of a large stream which flows into the Jordan (*Onom.* 964-65). The crusader Marino Sanuto notes that "the bank Ammon rises in Mount Pisgal and enters Jordan below Jaazer" (1897: 31).

Several sites are proposed as the location of Jazer. Among these are Ben Zaid (Cander 1889: 91), Khirbat Jazza (Dyer 1900: 30; Van 1967: 11-12; Gray 1967: 44; de Vaux 1967: 11-12; Simons 1967: 20; Bohling and Weigert 1967: 149; Bodo 1968: 246; Boerger 1968: 7; Peterson 1968: 149-50), Khirbat Qasr as-Sar (Setzen 1881: 3; Meritt 1933: 181; Van Zyl 1960: 91; or near Na'ur) (Aharoni 1979: 437 [with a question mark], Kallia 1966: 268 [for another site slightly to the west in the region], Kashe 1967: 26, n. 2), Khirbat al-Suq (Laudes 1966: 5; Van Zyl 1966: 91), Khirbat al-Yaoudh (Siedler 1962: 103; de Caeste 1964: 111; Noy 1965: 246; 250; 260-61; 1966: 32-33; Yajuz (Chapman 1885: 22-23; Cheyne 1901, 2: 2340-41) or Kom Yajuz (Cohen 1962: 300).

There is some supporting evidence for the identification of Jazer with a number of the sites listed above. Khirbat Jazza (250 m. maximum elevation) is a good candidate for its location. It is situated 1 km south of As-Sar at the head of Wadi Suq which flows into the Jordan River. It thus fits Eusebius' description of Jazer's location.

As Jazer is located less than 1 km from Khirbat Jazza it could be the Byzantine Azer which preserves the biblical name and which Eusebius associates with Jazer (de Vaux 1967).

From a toponymic point of view biblical Jazer and Khirbat Jazza are related. Moreover de Vaux (1967) reports ceramics from both the Iron and Hellenistic periods at the site. In the words of Peterson "little doubt remains that the Levitical city Jazer is Khirbat Jazir" (1962: 643).

Rab Zaytun is invariably identified with the 'Amma' Citadel.

Jabal al-Qala'ah (map coordinates 2-8/51) located in what is today downtown 'Amman (see, for example, Simons 1959: 333-340; Bright 1965: 35; Abel 1967: I 22- II 424-25; Mendenhall 1939: 14). Its size (that is, *ribban* = large) appears to have been the origin of its name (Gray 1902: 3318).

Josh fought against Rahab of the Amorites and took "the royal city" (2 Sam 12:26). Moreover, in a report about the incident to David, he claims that he took "the water city" (2 Sam 12:27). The latter was probably a section of the city that supplied it with water. It was apparently separated from the upper city, that is, the citadel area, or the city proper (Abel 1967: II 434). It most likely had its own defences (Simons 1959: 334). Ras al-'Avn southwest of the 'Amman Citadel/Jabal al-Qala'ah and at the mouth of Wadi az-Zarqa, is an excellent candidate for its location.

Ar, which means, "ruin," is said in the LXX version of Jer 49:19 against the Amorites to be "laid waste/desploied" (19). Its conclusion causes the prophet to implore Heshbon to "wail." It should thus be associated with the latter city and in its vicinity. However, no Ar east of the Jordan is known.

Instead of "Ar is laid 'waste/desploied'" of the NRSV and the RFB respectively, it is translated as "the ravager of Amorites" (NAB) and "Ar has been laid waste" (NJB). Thus, Ar here could be a common noun rather than a toponym (Holladay 1989: 368). Assurance is impossible (Bright 1965: 325).

The city of Heshbon appears on numerous occasions in the Hebrew Bible (Fetich 1989). In most cases, and indeed in the first reference (Num 21:25), it is associated with the Israelite defeat of Sihon, an Amorite king whose city it is said to be (Num 21:26) and in which he died (Num 21:34). It is one of the towns which the Reubenites are said to have rebuilt (Num 32:37). However, it is associated with the tribe of Gad in the lists of Levitical cities (Lev 21:58; 1 Chr 6:80). Heshbon does not appear in the Mesha Inscription and, thus, it would seem that around the mid-ninth century B.C. it was not considered a Moabite possession. Biblical references, namely Isa 17:1 and Jer 48:3, however, identify it as a Moabite city. On one occasion, in an oracle against Ammon, it appears as an Ammonite possession (Jer 49:3). It is apparent that it changed hands through time.

Heshbon, on the basis of the biblical data, can be located in a general manner on the central Transjordanian plateau. Deut 3:16-173; Josh 3:16 east of the Jordan River between Wadi al-Munib

Arnon in the south and Wadi az-Zarqa/Jabbok in the north (Deut. 2:24; Josh. 12:2). In most occurrences, it is west of both the territory of the Ammonites (Josh. 12:2) and "the wilderness of Kedemoth" (Deut. 2:26). Heshbon is related to such well-known and confidently identified sites as Moabla—Madaba and Dibon—Diban (Num. 21:30). From the biblical sources, nothing more definite can be posited about its location.

Esseus places Heshbon, which in his day was called Ishus, in the mountains of Gilead ca. 20 miles from the Jordan across from Jericho (*Onom.* 253 f. 6). The Talmud locates it at *Hushani Hesban* (Neuhauer 1868: 21). From a toponymic point of view, there is no doubt that the modern village and associated hill of Hishan bear the biblical name. The question is whether the biblical name has remained at the same site down through the centuries or has it migrated to modern-day Tall Hishan from another location? Tall Hishan (elev. 895 m) is situated in a rolling plain. It is ca. 9 km north of the modern town of Madaba and ca. 20 km south-west of 'Anman.

Andrew University excavated Tall Hishan for five seasons from 1968–1976 (Horn 1969; 1972; Borias and Horn 1969; 1973; 1975; Lige-Bell and Sauer 1972; Sauer 1973; Borias and Geraty 1976; 1977; 1979; Geraty 1982a, b; 1992; 1997; Geraty and Mearns 1981; March 1982). Baptist Rice College continued the excavation of a Byzantine church at the site in 1988. As a result of this work the excavators uncovered no remains older than sixth-century Late Bronze Age swords, earlier than the Iron Age I period (the 12th–11th centuries), when there was probably a small unfortified village supported by an agricultural/pastoral economy at the site (Geraty 1992: 82–90; 2001). Although there is evidence of the site's habitation during the seventh–eighth centuries, the best-preserved Iron Age remains date to the seventh–sixth centuries. The archaeological record indicates "a general prosperity and continued growth, probably clustered around a fort" (Geraty 1997: 20–21; see also Geraty 1992: 182). This settlement may have come to a violent end (Geraty 1992: 182; 1997: 21). There is no evidence for occupation during the Persian period but the site was reoccupied in the Late Hellenistic period. Habitation at Hishan continued throughout the Roman and Byzantine periods when it reached its zenith (LaBianca 1989: 264–65; Geraty 1992: 182–83; 1997: 21).

A problem with the location of biblical Heshbon at Tall Hishan is the apparent discrepancy between the biblical account of the

Israelite capture of the site from the Amorite king Sihon (Num 21:21-35; see also Deut 1:26-33) and the archaeological evidence at the site. The sites conquest as narrated in the Bible would have taken place (according to the later traditional dating) around the end of the 13th and the beginning of the 12th centuries B.C. As noted above, however, the archaeological evidence does not support the location of an Amorite capital city at Tall Hishari in either the Late Bronze or Early Iron Ages.

A solution to the problem might be found in the fact that the majority of literary studies agree that the prose segment of Num 21:1-35 belongs to a pre-Deuteronomistic stratum or the Pentateuch while the poetic portions vv. 21-35 originally and not necessarily with the earliest of Hishari (Miller 1983: 124). Thus, from a literary critical point of view, the narrative is either legendary (van Seters 1980: 117-19; Timm 1989a: 94-95, 1989b) or anachronistic (Miller 1983: 124). Furthermore, it must be noted that the biblical writers may have set their narratives at sites that were known to them and their readers. Such was the practice of the writers of the Palestinian Targum of the Pentateuch (McNutt 1992: 31; Alexander 1974: 5).

Most commentators identify Tall Hishari with Tall el-Hesi (Noth 1935: 248; 1944: 51, 53; 1968: 240; Simons 1959: 117, 121, 208, 449; Van Zyl 1960: 92; Abel 1967: II 348-49, 424; Olosson 1969: 86; Balz 1974: 233 note 11; Peterson 1977: 622-24; Aram 1979: 336; Bozinger 1983: 2; Gordin and Rabinovitch 1983; Miller 1983: 73; Timm 1989b: 17; Knud 1990; Lemaire 1992: 68* with question mark). There are, however, a few scholars who look for biblical Hishari at another site, for example Jacob Horn (1933: 42-43) or Abel (1967: 45; Bozinger 1983: 1) or a larger Hishari as more than the name of a "city" but primarily as the name of a region (Merling 1991). Despite these dissenting voices, it appears almost certain that the biblical site of Hishari is to be identified with Tall Hishari. This certainty is based on textual, toponymic and archaeological grounds.

In summary, the Hebrew Bible provides no definitive information on the territory and boundaries of the Amorites. It only informs us that the territory of the Amorites was located in the upper reaches of the Jabbok and that this river formed its boundary. The towns of the Amorites are located in the alluvial country in the vicinity of the upper Jabbok. With the exception of Rabbat and its asso-

called "water city" and Hesbion, it is impossible to identify any of them with certainty. The extent of Ammonite territory is indicated in a general fashion as extending from the Arnon to the Jabbok and to the Jordan. There are indications that the Ammonites acted to extend their territory to the west of the Jordan as well as to Jabbok and in the north. And after all this is said, we must still emphasize the temporary nature of Ammonite boundaries. These boundaries fluctuated according to various influences, opportunities, and/or pressures. Ammon, for example, moved its boundaries farther to the west, south-west, and/or north-west as favorable opportunities presented themselves. On the other hand, Ammonite territory shrank under less favorable circumstances.

Ammonite Epigraphic Material

Ammonite epigraphic material such as inscriptions, seals, and ostraca can be important indicators of Ammonite territory. Due to their prevalence, they can provide information about the areas the Ammonites inhabited. However, caution is needed here since a script can be used outside its "homeland" and inscriptions, seals, and ostraca are frequently found far from their places of origin. A good example of this is the Akkadian cuneiform tablet found at Tawilan in Southern Jordan (Bennett and Bienkowski 1995: 67-68). Moreover, there is frequently disagreement among scholars as to the extent of a particular script. The Dayr 'Alla plaster texts are a good illustration of this point (Lemaire 1997).

A number of inscriptions point to Ammonite presence in the area of Amman. These include three royal inscriptions, namely the Citadel, Theater, and Statue, plus the Tall Siran Bottle and an engraved cup.

The Citadel Inscription, found in 1961, is on a large stone slab measuring 20 × 60 centimeters. It is fragmentary and presently consists of eight lines of writing which are generally dated to the beginning of the eighth century (Millard 1991: 141; Israel 1997: 106; but see Cross 1969 for a ninth century date). It was probably originally a monumental inscription. The text refers to an Ammonite king who received instructions from the Ammonite god Milcom to carry out the building of some "structures/entrances," possibly parts of the Citadel or even a temple, along with Milcom's curse against those

who are hostile toward the king or who defile the structures along with his blessings promised for the "structures/entrances" and those who frequent them. Zavadine goes so far as to see the text as a dedicatory inscription of a temple to Milcom. He locates it on the middle terrace of the citadel where the Roman temple of Hercules now stands (Zavadine 1986: 19).

The Theatre Inscription, measuring ca. 8 cm long and 3.17 m wide, was also discovered in 1903 in the excavation of the Roman theatre. It bears two lines of writing including the words *bn šmr n* "Ammonites". Scholars are fairly unanimous in dating it to ca. 600 B.C. (Millard 1991: 141; Israel 1997: 106).

The Statue Inscription is one of several statues found in Amman. It has an inscription consisting of two lines on its pedestal which Zavadine reads as "Yerahazar, son of Sami." The latter is mentioned about 750 B.C. in the Assyrian annals of Tiglath-pileser III (Luckenbal 1926: 287-88; Pritchard 1968: 282). Because of this, Zavadine concludes that the statue bears the name of two Ammonite kings (see Aufrecht 1989: 108).

The Tall Siran Bottle, excavated on the campus of the University of Jordan in northwest Amman, bears an inscription which was made for Amminadab, son of Hissal-el, son of Amminadab, each titled "king of the Ammonites." An Amminadab of Ammon is listed by Ashurbanipal among the kings who paid tribute at the start of his reign about 687 B.C. (Weippert 1987: 99). He is believed to be the grandfather of the Amminadab for whom the bottle was made. Scholars date the inscription to around 600 B.C. (Zavadine and Thompson 1989: 170; Millard 1991: 141).

Finally, a cup found in an Iron II tomb at Khirbat Udhayna in southwest Amman is engraved with the name of its Ammonite owner (Hubner 199: 30-31). It is also dated to the sixth century (Israel 1997: 106).

A number of seals also provide evidence relative to the Ammonite homeland. One tomb in Amman yielded the silver seal of Acmur-mar, servant of Amminadab, who was probably the king of Ammon mentioned by Ashurbanipal. A Baal's seal impression, that is, a bulla, was found in the excavation of Tall al-'Umayri (Herr 1983; Yonker 1985). Baal's was an Ammonite king during the time of Nebuchadnezzar, ca. 580 B.C. (Weippert 1987: 101).

Finally, ostraca, designated as Ammonite and dated to the seventh-fifth centuries B.C. (Jackson 1983; Cross 1986; Aufrecht 1989; Hubner

1992, Israel 1997) have been uncovered in the excavations of Tall al-Mazar (Yassine and Teixidor 1986), Tall al-'Umayri and Tall Hisban (Cross 1975, 1986). Moreover, the excavations at Khirbat Umm al-Dawar and Safat have produced pottery sherds engraved with Ammonite personal names in a fragmentary condition (Israel 1997: 100). These ostraca provide information relative to places associated with the Ammonites.

The five inscriptions mentioned above provide evidence of Ammonite presence in the 'Amman area, especially in the region of Et Chadad, from the beginning of the eighth-sixth centuries B.C. Moreover, the seals and ostraca point to Ammonite sites or at least presence from Tall al-Mazar, north of Wadi Jabbok, to Tall Hisban in the south during the period from the seventh-fifth centuries B.C. But, as indicated at the beginning of this section, caution is advised when considering a site such as Tall al-Mazar as Ammonite on the basis of epigraphic material alone.

Archaeology

Researchers, using the results of archaeological surveys and excavations, have attempted and are attempting to flesh out the picture that the Bible and epigraphic data paint relative to the territory and boundaries of the Ammonites. Attention is now turned to the results of these attempts. Here again it must be noted that just as is the case for epigraphic material, it is often impossible to determine whether or not a pottery sherd is Ammonite, Moabite, Gileadite or Amosite. This is also true for other archaeological material, for example architecture. In other words, at the present state of research, the identity of archaeological material is difficult, if not impossible, to determine.

Conrad, as a result of his biblical studies and explorations in Eastern Palestine in the 1830s, concluded that the north-south extent of Wadi az-Zarqa marked the western boundary of the original Ammonite kingdom. He thought that this kingdom consisted of the small fertile strip on the east side of the wadi and extended to the desert. He extended the territory of the Ammonites to the south of 'Amman to such sites as As-Sweirina and Rujm Wasiveh. The Ammonite towns, in his opinion, were located in the broken upland district on the east side of Wadi Jabbok. He would allow for some westward expansion

of the territory, especially in the Amman district to include at least the *mafiya* "cottage" towers since he thought that they were integrated into the defense system centering upon 'Amm in 1949: 246-47.

Giesecke's position, in the Ammonite "homeland" was generally accepted for decades. In keeping with his position, German scholars (for example, Gese [1958], Hentschke [1960], Fohrer [1961], Graf-Reventlow [1963]) conducted, in the late 1950s and early 1960s, a number of surveys, especially surveys at Amman, with the object of defining more precisely the Ammonite borders in the area. Gese, the first of these German archaeological surveyors, following upon Giesecke's lead, emphasized that the *mafiya* towers formed a chain or a line of "border forts" (*Grenzfestungen*) between Ammon and the Israelite tribes (1958: 57, Hentschke 1960, Fohrer 1961), and Graf-Reventlow (1963) followed Gese's lead. Each surveyed a small section of the line, from Wadi as-Sir to Na'ur and Ruym Fehud. Thus, they outlined what they believed to be the southern and south-western Ammonite borders which, they thought, were lined by these forts.

There is much more data available presently on the Ammonites than had used by Giesecke and the surveyors mentioned in the previous paragraph. This is due to the fact that beginning in the 1970s, excavations at such sites as Abu Nuseir (Abu Ghannieh 1984; the 'Amman Airport Structure Herr 1983, Hennessy 1989), the 'Amman Citadel (Zayadine *et al.* 1989; Humbert *et al.* 1989; Humbert and Zayadine 1989; 1992; "Ammonite" towers (for example, Ruym al-Mabrak North [Bornaas 1976 and South [Thompson 1975; Ruym al-Makharza [Thompson 1975; 1981], Tall al-Kilwa (Yassine 1983; 1984; 1992; 1993), Tall as-Sir (Yassine and Dornemann 1989; 1990), Khirbat al-Hajar [Thompson 1976], al-Mu'ayyidun (Ruym al-Hera [Clark 1986; McGovern 1993; 1996; 1997; 1998; 1999], Tall al-Ram-Sayab (Franken 1972; 1989), Tall Dayr 'Ava (Franken 1965; 1992; and b; 1997), Tall al-Hammam (Prag 1966; Tall Hishan (Horn 1966; 1972; Bornaas and Horn 1969; 1973; 1977; Lagerlund and Sauer 1972; Sauer 1973; Bornaas and Geraty 1976; 1978; 1979; Geraty 1983a and b; 1982; 1997; Geraty and Manning 1994; Lohr 1997; Tall al-Hamra (Prag 1966a and b; 1990; 1991; Tall Jader (Herr *et al.* 1984; Tall Jawa (Yonker *et al.* 1990; Dawson 1992a and b; 1993a and b; Tall al-Mazar (Yassine 1983; 1984a and b; 1986; 1988; McCrery and Yassine 1997); Tall Nimrin (Dornemann 1990;

Flanagan and McGovern 1990; Flanagan, McGovern, and Yassac 1992; Tal, Salaf, Wimmer 1985; 1987a and b; 1992; 1993; Tal, Stein, Thompson 1993b; Tal al-Umayri (Geraty *et al.* 1986; 1988; Herr 1989; Yoankel *et al.* 1990; Herr *et al.* 1991a and b; and Unad-Dananir McGovern 1980; 1983; 1986; 1987; 1989; 1992; 1993).

4) 4c) provide a great deal of information about the Ammonite "homeland." Moreover, surveys, mostly by Americans, for example McGovern 1980; 1987, in the Baq'ah Valley northwest of 'Amman; Sauer and Klotz 1983; 1992, in the area of Wadi Ghazal along Wadi az-Zarqa between the modern cities of Amman and Zarqa; Ilach 1967, in the Hisban region; and the Madaba Plains Project in the vicinity of Tall al-Umayri north and southwest of Amman (Geraty, *et al.* 1986; 1987; 1988; 1989a and b; Herr 1989; Yoankel *et al.* 1990; Herr *et al.* 1991, 1994) are shedding new light on the Ammonite "homeland."

Sauer (1985; Klotz 1991), Herr (1992), and Hubner (1992) make much use of the above cited excavations and surveys in order to put as it were together in the same of their working together with the results of biblical and archaeological studies to present a picture of the Ammonite "homeland." Their presentation is particularly relevant for the late Iron II period. Sauer and Herr generally agree on an expanded Ammonite territory. Klotz and Hubner, however, describe a much more restricted "homeland," both geographically and territorially.

Sauer describes the growth of Ammon especially during the period beginning with its status as a vassal of Assyria then Babylonia, and then Persia (1985: 212). He finds the support for Ammonite expansion in the archaeological record in the form of what he terms Ammonite materials such as pottery, inscriptions, sculpture, and coins in the region of 'Amman as well as at such sites as al-Mu'abalein, Salaf, Kerak, al-Hajir, Tall Seab, Tall Hisban, Baq'ah Valley, Tall Dayr 'Ala, Tall al-Mazar, and Tall al-Sa'udayr. He concludes that during the late Iron II-Persian periods the Ammonites extended their territory as far west as the Jordan River, towards the north into the Baq'ah Valley, and southward as far as Tall Hisban (1985: 212-13).

Herr (1992) thinks that it is now possible "to say" something about the Ammonite boundaries, from a chronological as well as a territorial point-of-view. He applies the terms "Ammon" and "Ammonite"

to an apparent ethnic entity of the central Transjordanian plateau that it is just defining during the late Iron II period. He thinks that aspects of material culture and epigraphic remains suggest a coherent united "culturally" separate but inter-related groups nearby. Where distinctive elements of this culture are found in excavations they, according to Herr, are localized to the region north of Madaba and Ja'ul and south of Wadi az-Zarqa. Thus, this Ammonite culture is present at such sites as 'Amman' especially the Citadel, Sa'adi, Tal Dayr, Al-Jal, Tal Hisban, Tal al-Mizan, Tal-Salut, Tal al-Umayyeh, and Umm al-Danath. Specifically, Herr poses that the southern boundary of the Ammonites was at the Markab-Jalil region. He admits, however, that further excavations which are just beginning at Ja'ul, are needed. He states that there is none of the typical Ammonite pottery south of this region in the Iron Age tombs at Mevat Nera, for example. The northern boundary of this Ammonite ethnic entity would have been, according to Herr, the natural barrier of Wadi az-Zarqa (1992: 173). He admits, however, that the history of settlements in the hilly region between the Bag'ah Valley and Wadi az-Zarqa is still not well known and that further archaeological survey work, followed by excavations, is necessary to elucidate settlement patterns during the first millennium B.C. in this region. In the Jordan Valley, Herr identifies the "Ammonite" corpus of Late Iron II pottery at Tall Dayr Alla where there is none of this pottery at Tall as-Sa'adiya just a few kilometers to the north. Still farther north, at Pella, for example, there are no "Ammonite" pottery forms. Herr concludes that just as for the southern boundary, the northern boundary of "Ammonite" ceramic forms is well defined. According to Herr, to the east, this "Ammonite" culture extended unbroken to the desert while to the west it stopped at the Jordan River since very little of this ceramic corpus has been found at Jericho (1992: 175). On the basis of the dating of the Ammonite script and pottery, he dates this "Ammonite" cultural group to the late Iron II period (1992: 175). He finds it difficult to go back much before the Iron II period.

Dorsey's recent excavations at Khirbat al-Mudayna and survey explorations of the region surrounding the site may be throwing some light on the Ammonite-Midian border region (Dorsey 1991). Dorsey's preliminary conclusion is that Khirbat al-Mudayna may be Midianite rather than being a pre-Israelite settlement site located around 5 km to the northeast. may be Ammonite. She uses her comparison of the pottery collected at sites in the region and the names of these sites with the definitions of Dorsey (1991: 317). See below chapter 10.

Kletter (1991), starting with a reassessment of Gilead's and subsequently, the German position that the Rujm al-Malfuf buildings were Ammonite fortified towers built as a defense line for the early Ammonite kingdom, has reviewed the scholarly positions on these "towers." He has studied their number, function(s), and dates. He concludes that these buildings represent more or less the area of the Ammonite settlement and therefore the borders of Ammon during the Assyrian period" (1991: 43), that is from around 734-732 B.C. to 640-620 B.C. when the Assyrians took the west Jabbok (1991: 36). These borders, according to Kletter, were compact, well defined, easy to defend (except on the eastern side) and it seems that "the same borders defined the kingdom of Ammon for a long period" (1991: 43, see his map on p. 40).

Hubner locates the Ammonite territory in the western segment of the central Transjordanian plateau, north of a line from Heshbon to Mount Nebo as far east as Wadi al-Zarqa which, he posits, being Deut 3:16 and Josh 12:2, was its most probable northern boundary in the Old Testament period (1992: 11, 139 n. 4). Margaret al-Warde, the iron producing area to the north of the Jabbok, was not a part, according to Hubner, of the Ammonite territory (1992: 15). Specifically, he sees the southern border of the Ammonite state as being primarily north of Heshbon (1992: 14), Khirbat Masara, and Umm al-Arnat to south of al-Yabrud, Tall Jawa, and Nabata (1992: 4). The western border in the Iron Age was, he posits, in the west of the Transjordanian plateau in the upper part of Wadi al-Banat (Wadi as-Sit) Settlements in this area included Umm al-Qanat, Khirbat al-Hijab, and Rujm al-Kursi (1992: 140-141, 1992: 142). Hubner extends Ammonite territory northwestward to include the Baq'ah Valley (including Rujm al-Hinn (2261-26) and Rujm al-Baw (2262-1652) but he does not know just where the Ammonite border in the northwest and west of the hinterland of the Baq'ah Valley was located. He insists that the territory of as-Sab, Khirbat al-Rasah, and Khirbat Ghalad were often in Gileadite-Israelite hands (1992: 145). He thinks that it is likely that Wadi Umm ad-Danar (which goes in a northerly direction from Khirbat Umm ad-Danar (2273-1659) and, later, the upper segment of Wadi ar-Ruman was the boundary between Gilead and Ammon (1992: 145). Khirbat ar-Ruman, according to Hubner, was most likely an Ammonite border location (1992: 145). The organizing of the steppes of the desert was in this region the "boundary" of Ammonite territory in the east (1992: 140). In summary, according to Hubner, Ammon was

around 40-50 km north-south, around 25-35 km west-east. The total territory was thus around 1400 square kilometres. Ammon's neighbours were Moab to the south and the southwest, Israel to the north and the northwest, and in the northeast the territory of the Arameans (Hübner 1992: 146; see also his map pp. 330-3).

Conclusions

It is evident that there is little archaeological and epigraphic support for the biblical statement that the territory of the Ammonites extended 'from the Arnon to the Jabbok and to the Jordan' (Judg 11:3). The best that can be done is to look for the evidence from the above-mentioned sources plus the Bible and see the Ammonite territory as comprising a small area such as that which Gunkel, Kellum, and Hübner envisage or a somewhat expanded territory such as that which Sauer and Herr postulate. This latter position is closest to Judg 11:3.

There is little firm evidence for the identification of Ammonite sites with the exception of Heslilon, Jazer, and Rablah. More data is needed in order that convincing locations for Arzer, Min, and the Abakkeramim be established.

From a chronological point-of-view the information we have about the Ammonites is best seen in the Late Iron II period when Ammon was a vassal state of Assyria. There is the possibility that this situation extended in time to the subsequent Babylonian and Persian domination of Transjordan. Little can presently be convincingly stated about the Ammonites during either the Iron I or early Iron II period. The Bible is therefore most probably describing the Ammonites as the biblical writers knew them during the late Iron II Age.

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CHAPTER THREE

CENTRAL JORDANIAN CERAMIC TRADITIONS

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Introduction

Pottery of Iron Age date in central Jordan demonstrates both continuity with Late Bronze Age traditions as well as significant changes in form, finish and decorative techniques. As the main archaeological category targeted so far, these vessels represent a distinctive tradition. These ceramic objects occurred throughout the area's ancient Jordanian-Israel at different times in different places during the span of the Iron Age. In common with most areas, the general region known as Ammon presents a challenge to characterize its ceramics in ceramic tradition's and pottery boundaries. The two do not necessarily overlap at every site. All ages therefore have been recognized and archaeological excavations in the region yielding large quantities of pottery. A relatively small number of finds has been subjected methodologically or otherwise to determine if the material was made in the region or brought from afar. Pottery production locations evade detection.

For these reasons, it remains unknown which pottery types can be considered made in Ammon before or during the era of an Ammonite entity mentioned in the Hebrew Bible. Archaeologists therefore assume that the lack of pottery excavated at a site was of local origin but a term as rigorous as it is implying that pottery was made at a site at a given site is not precise. The region as opposed to articles of long distance trade. The absence of adequate methodological testing to determine local origin. The following discussion addresses only the broader regional ceramic traditions of central Jordan. One advantage of not attributing specific wares to the Ammonite area and treating the central Jordanian region rather than Ammon specifically, is that we avoid associating and identifying pottery with people and political or social entities.

Pottery starts, of course, as clay in the ground. It is first excavated and prepared, then shaped into containers, dried, fired, and distributed. The goal here is to follow the work schedule of a potter rather than present a typological inventory of the different forms. The common pottery traditions and technologies provide evidence of the manufacturing techniques of the ceramicists of Late Bronze and Iron Ages in central Jordan.

Ceramic Potential of Central Jordan

Raw Materials for the Potter: Clay, Water, and Fuel

For the geologist, the characterization of clay differs dramatically from a description given by a potter. For the latter, a primary concern is whether or not he/she can fashion pots from a particular clay rather than the mineralogical composition of the clay components preferred by the geologist and archaeologist. Designation as "good clay" implies that the potter possesses a technique suitable for shaping the clay into pots. A "bad clay" refers to a material unusable as a particular potter, although it may well be suitable for another potter who uses a different manufacturing technique.

A variety of local clays, available in central Jordan and elsewhere in the country, still supplies Jordanian potters with clay (London and Sinclair 1991). Clay is not sold, which allows potters to use it as and when they need it. Some potters who sell pottery at markets in the region are still in Hejaz, Irbid, and Jericho (ibid. 245; London and Sinclair 1991). Other potters work with local clays to fabricate wares for household use (London and Sinclair 1991: 121; Merckel 1985; McQuinn 1984) documents the use of local clay for constructing ovens. At least some, if not all, of these clay sources were available and exploited at different times in antiquity. It was not imperative to import clays or pots to Jordan.

Clays in both Jordan and Israel tend to be a secondary deposition that is, rather than finding clay adjacent to their parent rocks, the clay beds form from a long stream bed and depositional pockets far from their origins. As a consequence, wind blown and water eroded clay deposits create a raw material mixed with an assortment of rocks and debris. The latter can be detrimental to pottery production and at times required potters to sort special clays or prepar-

ing the clay prior to its use over and above the removal of sawed large rocks, leaves, roots, etc. Potters will usually carefully prepare the raw material, but to create a clay suitable for wheel throwing often requires more work than for clays used in hand building techniques. To create a clay for throwing pots on a fast moving wheel for example, it was necessary to leach the clay by extracting most of the non-plastic inclusions. Moreover, rather than investing a considerable time and work in such a cleaning procedure, potters in Israel and Jordan learned to work with the clays almost as they found them. Clearly, although potters and their assistants would have always removed the largest of the undesirable elements, their primary strategy was to develop pottery-making techniques suitable for lean clays, i.e., those rich in non-plastics, rocks and minerals. Among the advantages of using the locally tempered clays were relative ease in attaching accessories, drying, firing and a durable product. Disadvantages include thick walls often lacking decoration.

Painting the surfaces of pottery of unglazed or painted clay is risky since the pigment must be dissolved by the raw pot, its rocks and minerals. The solution to this problem involves the application of a slip layer to cover the surface prior to painting. This slip is a measure or precaution so viewed as long as the slip adhered to the vessel wall, which was not always the case. To all too well, the slip would absorb excess of the finest clay particles, resulting in a seam to the clay of the pot. Coloring agents can be added prior to or to the slip. Even if the slip is a good match for the pot, if the slip and water, or by the potter using the manufacturing container, the slip can flake off, removing the overlying painted pattern as well. As water enters the molecules of water adhere to the surface of a pot with their capillary. Along with the water salts naturally present in the raw material also reach the surface where they are deposited after the evaporated. Salt, potter's lye, or even, as it is known, is scum, or bloom, which separates the slip from the clay wall. To prevent a salt deposit from interfering with slip adherence, potters had no choice but to scrape away the surface, after which the rest of the clay.

It is extremely rare both unglazed slip, the once and a while, and a suitable surface to paint. To scrape the surface of the vessel was not removing so much clay that the walls of the vessel were weakened, require a skilled potter. Excessive scraping resulted in a chipset pot. In contrast, almost anyone could paint the surface.

Consequently, in place of fine well-executed designs, if a sloppy pattern covers a large part of the vessel surface, and if quantity of decoration exceeds quality of the design, it is possible that untrained saluted painters were responsible rather than professionals. Such a style of decoration characterizes exported Caprot White Sherdunk bowls (Layard, 1880). In contrast to earlier examples displaying a well-executed and fine line patterns, later White Sherdunk ware made for export exhibit crowded, heavy and thicker lines painted by inexperienced learners. Finest pottery was still the norm in ancient Jordan and Israel. The quality of the work of the low masters and the society the potters worked with what was available to create usable ceramic low-cost utilitarian pottery and luxury wares.

Importance of Water

Without a reliable water source, potters cannot work. Ancient potters could not wash and throw out the clay and no alternative but sand, clays and water. They overcame the shortcomings of the raw material by scraping the surface of drying pottery to remove the salt deposit. In removing the salt deposit, potters simultaneously scraped away excess clay and formed a thin, wet, and a surface receptive to paint. By scraping away excess clay, the potters resolved several problems simultaneously: thinner walls created vessels more resistant to break less likely to crack during drying and firing, and removal of the salt deposit allows a slip and paint to adhere to the surface and resist. When the potters scraped to remove the excess clay and salt deposit from the pottery, this was the next step of the manufacturing process. Hence, the next stage of work. Unless the salt deposit was removed, the slip and paint could not adhere well. Even if the paint adhered, the presence of salts on the surface create an overall whitish or grayish background which masked the painted pattern by reducing its visibility or making it less sharp and difficult to detect. By scraping drying pots at precisely the right time, the clay particles on the surface become aligned in such a manner that when fired correctly a better surface is result.

Given the problems potters confronted, there is little wonder that most of the technical Late Bronze and Iron Age pottery wares painted decoration. Not only by character of the manufacturing technique involving scraping or forming to thin the walls, creating the better burnished surfaces. In contrast with earlier pottery, Late

Bronze Age wares are often described in negative terms as heavy, thick, with poor shape and decoration. In the absence of scraping and thinning the walls, heavy thick pottery lacking graceful lines and decoration results.

In view of the above, the most significant problem with the Late Bronze Age pottery was the failure to thin the vessel wall. Failure to do this led to a number of undesirable consequences including 1. thick or cracked bases, 2. heavy walls, 3. salt weathering on the surface, 4. poor slip adhesion, and 5. poor paint adhesion and low visibility (Franken and London 1960). The end result was an industry in need of improvement.

One technique was not settled for pottery to eventually come to resolve the problems presented by the raw material. One benefit from scraping away excess clay is that the surface becomes compacted due to the pressure of the scraping and if the clay is not too wet nor too dry when scraped, and if the pot is fired to an appropriate temperature in the kiln, the result will be a finished surface due to the compacting and ageing of the clay particles. Although initially the brushed surface was not intended to be glossy, the act of brushing or scraping the exterior wall created a surface suitable for slip and paint adhesion that created a brushed shiny surface. Perhaps even the potters realized the better it was with a brush they chose it as the surface for paint adhesion. At the time of paint application the pattern may have been well executed in sharp crisp lines, however, carefully rendered lines can melt into drip lines if the kiln temperature becomes too high. Burnished surfaces are always compacted, but they are not necessarily shiny. To achieve the shiny surfaces of the pottery which is high enough to cause a reflection, but not so high as to create a brushed effect.

Fuel for the Kiln

The availability of the pottery in ancient Jordan was not necessarily problematic since kinds of fuel for cooking a variety of organic materials such as pine cones, wood, dung, bark, etc. In northern Jordan, a rural potter still uses dung cakes to fire her pit kiln (London and Sinclair 1991: 42) as is commonly done elsewhere in the world (Lancaster 1981: 100). Dung may have been collected and used for kiln fires near a quarry. Rather than burning large quantities of fuel, kiln firing can be a 10 hour process which may require small amounts of precious fuel. In Cyprus, for example, among traditional rural

potters who fire jugs, cooking pots, etc. wares are stacked in the kiln at 7:00 a.m. and left there for 24 hours. The big roaring fire, however, is of short duration based on observations of over 40 firings. Initially the fire is a *crinag* (a) composed of the *simasy* (b) twigs for several hours and the pots are thoroughly dried. Generally, slightly larger pieces of wood are placed in the firebox. Not until between eight and 10 hours later are a few large logs (c) 10 cm in diameter added for two or three hours only (London 1989: 284).

Just as the Capatzen potters wisely utilize limited fuel resources, so do the *guc'at* potters. Since traditionally potters are responsible for collecting and transporting their fuel, often on their backs, it is not advantageous to maximize fuel use. Potters prefer a fast-spreading fire to make more pots instead of one. As a result vast quantities of wood were not required to fire these wares. This is always evident in the firing colors of the ancient wares. Archaeologists often describe pottery as "poorly fired." Fuel conservation could be one cause of the darkened cores found in the walls of the potters' chimneys, suggesting once the pottery was dried but not fully fired. Other factors contributing to the darkened cores and partially fired wares, are the inclusion type as well as the surface treatment (Franken and London 1985: 213). Burnished wares lose their sheen when fired too long or too long, thereby burning firing time and temperature. Thick painted designs and polychrome decoration are a result of overly high firing. As a result, there were numerous reasons for the potters to minimize the heat.

Another efficient use of fuel involves maximization of the kiln space for each firing. This requires that potters store drying pottery tall enough to fill a kiln. Normally potters make and accumulate boxes of every size and shape to fit every piece of pottery. For example, a potting right store a kiln with a different pot. An arrangement of this type appears regularly during the pottery making season, especially between potters who specialize in a single category of pots. For example, potters who concentrate on labor-intensive, semi-abstract, decorative pieces share a kiln with a potter who produces large quantities of ordinary, less decorative utilitarian forms for daily use. At the end of the season, when no potter has enough dry pots to fill a kiln, but the autumn dries threaten, several potters might share a kiln. Another space-saving practice involves stacking small pots inside larger ones to maximize space (London 1989: 284 and K. Age-ghis 1989: 13).

Transportation and Distribution of Pottery

Rather than the lack of fuel or clays, transportation of pottery to Jordan was both a problem and an inspiration. Although fragile pottery can be transported over considerable distances, geography did not favour easy access to Jordan. Although the Levantine coastal strip, pottery production was a feature of the economy, as was the importation of the decorated and specially wares from Cyprus, Greece and Egypt. Ornamental ceramics, especially from the Aegean which specialized in painted pottery, provided ancient Israel and Lebanon with a source of luxury wares on a regular basis, at least until the end of the second millennium B.C.E. when the local 'Philistine' painted pottery replaced the Aegean imports. Throughout Cyprus and Greece, clays of vastly different qualities contributed to a thriving local ceramics industry. Matson (1972) in contrast to clays of the Levant and Jordan, found largely secondary clays which did not offer the versatility of the Aegean raw materials.

Neutron activation and petrographic analysis confirm the presence of imports to Israel, where pots could arrive by ship and then be disposed of in final consumption areas. However, the geographic location of Jordan rendered long distances and not for the fragile pottery and its contents. As a consequence there was considerable resistance to the long distance distribution of fine wares which is reflected in the limited Jordanian markets, merchants not only transported the wares from considerable distances, but also sustained the increased risk and cost of moving a highly breakable commodity of relatively low intrinsic value. There is no question that some imported pottery did reach Jordan from the Mediterranean, Egypt, and Saudi Arabia. Evidence for this includes the well-known luxury wares found at the 'Amman Airport' (Hankey 1974: Here 1983), Sahab (Dajani 1970; Ibrahim 1976; Magabib, Harding and Issa 1993), Pella (Smith, McNichol and Hennessy 1990; Knapp 1989), Tall Abu al-Kharaz (Fischer 1961: 1995: 103), Dava 'Ala (Franken and Kidder 1969: 115; Franken 1992: 112), Tall as-Sa'diyya (Pritchard 1980), Tall 'Aja and elsewhere. Leonard (1961: 1961) notes that the Mycenaean pottery in Jordan is 1000 km from its source.

This is not to say that it does not include all of the wares brought from Israel. For example, petrographic analysis of a bi-chrome jug found at 'Umayn suggests that it differs substantially from the rest of the repertoire and could represent an import from Israel.

where ceramic vessels are more common (Landon, Philo and Smith, 1990: 430). Imported pottery from the east such as the Assyrian 'Black ware' has been recorded at numerous sites throughout Jordan (Yassine, 1984: 62) and other wares were probably brought from the direction as well. In his assessment of the distribution of painted 'Micahite' ware made in north-west Arabia and found sparingly in Jordan (Parr, 1983: 29) concludes that this pottery was not deliberately nor methodically traded. This is despite the natural route stretching from Jordan to Arabia. The relative dearth of imported decorated wares implies that geography encouraged the local pottery production in Jordan.

A times a great potter's tradition Jordan excelled. Wares belonging to the chieftainship-ware tradition represent some of the finest and products of the mid-second millennium B.C. in Jordan (Landon, Several hundred years ago, if not the pottery used for Iron Age cooking, not yet then known to us, was a simple brown jar. James Landon in Karack 1982: 100). To compensate for the geographic constraints, trading the imported pottery, the local potters have been the challenge by creating such extraordinary wares. At present we are just beginning to learn about the journey of migration and across the Jordan River in both directions (Karack, 1982: 100, 101). There is no reason to assume that the movement and exchange of technology and communication was entirely in one direction or controlled by one

Ceramic Tradition

Any given time in antiquity it is likely that not all one pottery-making technique was in practice or the construction of assemblage with a certain assemblages. The presence of different pottery-making techniques – excavated pieces from a given site does not necessarily imply communication among potters or workshops. Diverse pottery techniques co-exist for many reasons. These can include different properties of the clays, special demands of cooking vessels (e.g. and fire ware), unique requirements of large vessels (e.g. oil-tainers) and requirements for finishing techniques.

Falkner (1979: 19) describes a single ceramic tradition when any archaeological period is comprising all aspects of excavation pottery production from clay procurement to manufacture, de-

ration, drying, firing, and distribution. An archaeological assemblage can consist of more than one tradition, as is the situation of cooking pots which often differ from the rest of the repertoire in clay, manufacturing, decoration, firing, and distribution. A single tradition can be widespread or restricted to a small number of people or workshops. More than one tradition can coexist. Specific types can be fashioned using more than one technique within an archaeological period and region, rather, as with standard *balawat* bowls, cooking pots, juglets, etc. Each technique, possibly representing different workshops and raw materials, can facilitate the identification of regional production centres. For our purpose, the goal is to identify and describe the numerous co-existing pottery making techniques and traditions used by potters working in the central Jordanian region during the Late Bronze and Iron Ages. Most techniques continued in use throughout the period, although towards the end the practice of firing pottery became less prevalent than previously. It is the coexistence of fabrication technique, shape, clay, and surface treatment that allow one to identify the work of different ceramic pottery-making production sources.

To better the central Jordanian Late Bronze and Iron Age ceramic traditions requires the assessment of complete or reconstructed pots and vessels. The analysis of whole vessels allows one to state an evidence of all aspects of manufacture. Several detailed studies are available on the progress for pottery excavated from the region of central Jordan and Jordan Valley. Such studies include those from Tel el-Khazir (1961), Tall al-'Umayri (London 1964a; 1995), Tall Dima (Ala, Franko, and Knaibek 1961; Fakhri 1992; Al-Jarrah 1993), Bajajik Valley sites (Glanzman 1983; McGowan 1986), and Tall as-Surayya (Al-Jarrah 1981; 1982; 1983; 1984). All sites are within a distance of 100 km or less. The preliminary typological studies of pottery excavated at Lathra and Besayra, south of the central Jordanian plateau, especially contribute to the basic understanding of Late Bronze and Iron Age techniques of fabrication within the region (Hornes-Frederick and Franksen 1986: 11-71; van As and Jacobs 1993). Given the current state of research and publication, one cannot know precisely which pots were made in the region of Ammon. It is, however, possible to document what has been found in the region and describe the manufacturing techniques and clay whenever possible, as well as the contemporaneous pottery found outside the Ammonite region.

During the Late Bronze and Iron Ages, similar pottery making techniques were in practice in both Jordan and Israel. This was due to the dictates of the raw materials, the demands of the clientele, and the restricted technology. Regional variations potentially arise in particular rim forms, overall vessel proportions, potters' marks, and details of the surface treatment. However, one must be cautious between regional variations and minor temporal differences, especially given the practice of comparing and contrasting superficial attributes of vessel form by subjective means. Rather than chronological differences between pots found in the Jordan Valley and the central Plateau of Jordan, rim and handle shapes could reflect different regional workshops. Sparse imported objects, which may or may not have been curated for decades or more and therefore represent an earlier time frame, cannot provide an accurate date. For this reason, it is difficult to compare pottery found at different sites in terms of precise chronological distinctions.

It is more useful to note similarities or differences between entire assemblages found at different sites. In doing so, the Tall Dab'a 'Alalite' assemblage best illustrates pottery links with pottery in Israel (Franken and Kalsbeek 1969: 176, 245; Donnermann 1983). It is likely to come and other deposits from the central plateau. For Iron II pottery from Tall Dab'a, Helmer (1990) notes that while certain forms found parallels in Israel, they are restricted to the plateau and Jordan Valley and still others are more limited to the Jordan Valley. One element of the research is to note similarities region-wide, but the chronological significance of these similarities and especially the differences remains open to speculation.

In doing so, with Late Bronze and Iron Age pottery traditions covering hundreds of years, the borders of Ammon were not necessarily constant or well defined as demonstrated by Kletter (1990) and MacDonald (1994: 52 and 59). While the northern boundary of Ammon is the Wadi Jabbok or Zered, the eastern boundary is the desert and the western boundary is the Jordan River and Dead Sea based on generalized biblical accounts (MacDonald 1994: 9). These borders may have shifted in terms of political and economic entities. It is possible that pottery used in the Jordan Valley sites, while made in a manner similar to that used on the plateau, was the product of different workshops than those supplying the plateau sites. To move utilitarian pottery made in the central plateau area down to the Jordan Valley sites seems impractical given its fragility and the

nature of the terrain. Sites located in the extremities of the region may have economic ties with their neighbors and received pottery from adjacent communities. For the Late Bronze Age deposits at Tall Dahr 'Alia, 70-75% of the pottery was made of a local clay, i.e., the banded clay containing quartz sand, iron oxides (Franken 1992: 106-8; 113), and does not come from the central plateau, the latter center of Ammon.

Before assigning chronological significance to the presence of a specific technique and vessel form, it is useful to characterize the manufacturing techniques represented in different sites and then compare the techniques from site to site. This approach allows one to incorporate manufacturing techniques in assessing assemblages rather than relying on form and finish alone. One eventually can learn where a technique originated or at least whether it appears earlier in one region than another. There is little reason to assume that any single new technique will suddenly replace all others. For an identical method to disappear, it first must be proven effective. The range of choices available to potters is not unlimited since factors are closely restricted by the available raw materials. A newly introduced manufacturing technique initiated at one site will not necessarily spread to every other nearby site, especially if it involves a different clay recipe from that in use. The same applies to wares made in Jordan versus Israel. While it is possible to designate more distinct ceramic traditions characterized Israel and Jordan, the traditions might have overlapped despite geographic barriers while not appearing in one region simultaneously.

Raw Materials: Clays and Inclusions

The limited nature of published reports of clay and inclusion analyses of pottery allows one to conclude that clays were available to all Jordanian potters. These clays largely of secondary deposition, normally included non-plastic inclusions. The latter were part of the clay. Potters had the option of extracting some or all of the non-plastics and then working the clay or, conversely, they could add inclusions. Often it is difficult to determine if the non-plastics were native to the clay or added. An exception is grog, made by crushing pottery into small pieces for use as an inclusion. Very fine grained voids from organic material suggest that plants and/or dung were added intentionally.

The angular carbon was found in cooking wares were purposely mixed with the clay to create a ware suitable for reheating as evidenced by the sharp angles and occasional bagging in evidence (Rowland 1972).

Other inclusions include quartz, chert, basal, granite, limestone, foraminifera (fossils), shell, shale, grog, and organic materials. And iron oxide. This list will undoubtedly be expanded as future tests are conducted. The precise combinations of manufacturing technique and clay recipe will help to define individual ceramic traditions.

Pottery Production Location

Archaeologists rarely find evidence of pottery production. With the chemical and mineralogical tests they cannot characterize pottery as "local" unless the samples from the work pottery found at a site was of necessary manufacture from the site. This requires the presence of pottery workshops at or near every sizable site. Were this the site for all antiquity, one might expect archaeologists to find and excavate kiln sites regularly, yet this is not the case. Where are the kilns, and why have archaeologists identified so few pottery production locations given that pottery was the single most dominant artifact from all excavations?

One explanation for the dearth of archaeological sites is that the location of pottery industry outside the major tell sites and inside the confines of rural settlements. Since excavations tend to concentrate at tell sites, the paucity of kiln sites can be attributed to the confines of habitation. It is not likely that tell sites for field work. Only small sites in rural settings are investigated in detail. Pottery production locations will remain scarce, especially if pottery was produced solely in villages rather than in major settlements. Whereas tells are usually thought to be sites of large size and, therefore, inappropriate locations for pottery production, for the most part this claim is not valid. The majority of excavated sites in both Israel and Jordan are small, although there are a few exceptions; and often a rural area devoted to domestic structures in contrast to the space allotted to public buildings, royal enclosures, religious structures, and open spaces (Long 1962). The implication is that under current opinions, few people lived at the tell sites and as a result pottery production may

not have been part of the regular work carried out there, especially if pottery was produced in or near the household courtyard.

To make pottery, one needs clay and water readily available. Since water is a necessary and very convenient resource, villagers living near water as well as clay could have produced pottery during the dry summer months. Seasonality of the ceramics industry contributes to its invisibility in the archaeological record. Pottery can be made by individuals working in the courtyard of their homes where they shape the forms and fire the kiln (London 1989a: 76 ff.). It is possible that pottery was produced in many domestic rural settings, but there was no room for storing the finished functional vessels in the courtyard space. During the wet season, there might be no time or pottery-making tools or raw materials in the courtyard where pottery is produced, for only part of the year. Once pottery production ceases all together and the pottery production location changes, kilns can be dismantled for the rest of the season and broken. Finally, understanding evolution of ceramic throwing technology did

Manufacturing Technique

Equipment: Work Surfaces, Turntables, Wheels and Clays

When compared with pottery of the late seventh B.C.E. Iron Age wares, the late second millennium B.C.E. lack the elegant lines, thin walls, and sophistication characteristic of certain Middle Bronze Age ceramics. To a large extent this reflects the return to the use of a slower moving work table in contrast to the fast wheel. For whatever reasons, society could no longer accommodate a more massive pottery industry which required highly skilled potters using a clean plastic clay to throw pottery on the wheel.

From the perspective of making pottery, to throw pots on a fast wheel requires a clay with plastic and slow, preferably very small, sized clumping particles a potter to make pots faster. It therefore, can be more cost efficient than the use of a slow turning work surface. The difference between fast and slow rotating wheels or work surfaces involves the use of either one or two hands on the clay and not simply rotational speed. To throw a pot, pairs of hands are free to form the shape and create a thin walled vessel from the

start. The heavy weight of the wheel used to throw pots allows it to continue to rotate due to momentum rather than continuous pressure applied to the wheel. Once the wheel starts rotating, it spins due to the combined weight of the clay and wheel. The speed of the fast wheel wheel can rotate around its axis some 60 times per minute (Frankel 1992: 149). It is stated the use of a plastic clay devoid of large inclusions.

Table 1

Clay	Manufacturing Technique	Surface Treatment	Drying and Firing
Lean clay	Punch pot	Accessory pieces	Plastic area, but less easy than plastic clays needles.
	Cups	Slips	
	Slabs	Paint	
	Molds	Burnish	
	Turning	Applique	
	Cone/hump throwing	Incised patterns	
Plastic clay	Throwing	Paint	Controlled draft-free space or slow drying
	Cone/hump throwing	Incised patterns	
		Reversing	

Potential uses of lean versus plastic clays. A long accessory pieces and a number of other techniques are used to create a plastic area, but the potter applied them to plastic clays. For example, Iron Age thin wall vessels and cups with an almost vertical rim were known from the Iron Age. Many of these from the Iron Age plastic clay have a thin disc on the rim, the size of the rim from the rim. The rim is known as a rim. (Frankel 1990: 164). Although feasible, incised patterns on lean clays run the risk of dragging large inclusions along with the clay.

In contrast, the slow-moving turntable lacks momentum and is unstable when throwing a pot. Once the potter stops pressing it, the turntable will soon stop rotating unless a potter or assistant applies constant force to be turntable with one hand. Most clays in Israel and Jordan are lean or short clays containing abundant rocks and minerals. Such clays would be ripped apart if worked on a fast moving wheel, although some lean clays can be rendered suitable for wheel throwing by partial elimination of the inclusions. Clays treated in this way would not necessarily result in a plastic clay, but are suitable for wheel-thrown manufacture.

Since every decision made by the potter influences each successive step in the production of a form, the use of plastic clays has its consequences with regard to the drying, firing, and final appearance of the vessel. Plastic sticky clays can be painted but are less amenable for the application of accessory pieces such as handles and spouts. Accessory pieces tend to detach during the drying and firing stages. This results, in part, from the drying properties of plastic clays. Like even in a clay body with minimal incl. acry is a dense wall that can inhibit the overall air-drying process. As a clay pot dries it shrinks. Plastic clays shrink more than lean clays. The surface of plastic clays can dry faster than the interior wall thus causing warping, cracking, and detachments of handles and spouts. The potter can avoid the necessary also use clay of higher incl. acry. Frankel (1974) to presents numerous solutions to handle attachment problems. Use of lean clays avoids this risk because of the rock, mineral, and organic materials that serve to open the vessel wall and provide excellent for air evaporating water thereby making drying relatively uncomplicated. However, to dry pottery made of a plastic clay requires ideal conditions, namely, a sheltered space devoid of drafts, sun, and severe temperature changes. To successfully use plastic clays almost necessitates a workshop organization that provides space for preparing the clay, shaping the pots, drying the pots, and storing them until they are fired. A large size (possibly) rural specialists who could afford the luxury of ample storage space would have been responsible for the production of wheel-thrown wares.

Table 2

<i>First Stage</i>	<i>Second Stage (if necessary to create a desired shape)</i>
Pinch pot	Add another pinch pot bowl to create a closed vessel
Slabs	Cuts
Molds	Cuts, join 2 molded pieces
	Turning
	Throwing
Cone	Turning
Turning	
Cone or hump-throwing	
Wheel throwing	

Late Bronze and Iron Age manufacturing techniques and production stages prior to final surface treatment

To avoid the risks and requirements of plastic clays, potters could work with a lean clay, either as found in the ground or altered in some way, for example, as by removing the largest inclusions. Other rock and minerals could then be added, known as non-plastics, tempering material, inclusions or grits, or the clay could be used without further manipulation. Special jar wares, such as cooking pots, required the addition of suitable inclusions to accommodate vessel use and repeated heating and cooling of the pots with heat. Most ethnographic accounts of traditional potters worldwide reveal a preference to use clay in a temper from the earth. Jordanian potters add only water after extracting the largest rocks (London 1991b: 28). This was probably the most common situation in antiquity. Van As and Jacobs (1993: 24) conclude that the ancient potters of Late Bronze Age and Iron Age Wadi-ʿAra in Jordan used unaltered clays from Wadi Lahun to coil and turn pots on a turntable. Another possibility that allows potters to work with available clays with minimal preparation is to mix two clays together, one lean and one plastic, to benefit from the properties of each. This is the situation among traditional Filipino potters of Cebu (London 1991b: 28 and 30).

In Jordan and Israel during the Late Bronze Age, wheel-thrown pottery was replaced by wares made by several different techniques, as opposed to a single technique. During the MB II zenith of wheel-thrown wares, there were potters who continued to work with a slower moving turntable to create small forms (Fig. 11). Use of the turntable was never lost. The same wheel capable of functioning for throwing pottery can function for techniques requiring a slower moving work surface. A thrower's wheel can be rotated slowly, but a small, high weight turntable cannot function as a thrower's wheel. Late Bronze Age "Michanite ware" of Northwest Saudi Arabia was possibly made on a large wheel capable of rotation, but without fully utilizing the fast wheel to its potential. Instead, it was used as a slow moving turntable to create small and large containers (Kassabek and London 1993). Foster (1993: 12) presents ethnographic data that refers parallel instances of potters who possess a kick wheel but use it to coil-build pots. Similarly, in ethno-archaeological studies of traditional craft specialists in the Philippines and in Cyprus, potters presented with the possibility of working with a fast wheel chose not to use it. The wheels were brought in both instances to the communities by well-intentioned potters from other countries. In the Philippines, the foreign potters demonstrated the use of the wheel

but the vast quantities of fuel and water needed for clay preparation hindered its use once the foreigners left (personal observation London 1981 and 1986).

In the literature, the term "hand-made" contrasts with "wheel-thrown" pottery, but these distinctions are ambiguous and misleading for several reasons. It can be argued that all pottery is handmade, perhaps with the exception of mold-made forms. To differentiate between hand- and wheel-made wares by macroscopic observation is far beyond the means of non-potters and those not trained in ceramic technology. The concentric striations are insufficient evidence to identify pots as wheel-thrown. Similar lines can be achieved on a slow-moving turntable or even by rotating a pot in the hand. Wares described as "handmade" can include any technique but "hand-thrown pottery" such as the use of molds, coils, slabs, turntables, or pinch pots. In addition, potters often work with a technique comprising more than one method. For example, Andriana and Cyprine potters work with coils and a slow moving turntable (London 1980a, Jordanian, *cit.* Karageorghis 1989: 2, 4; London 1986: 2). Instead of working directly on the ground, a table or wheel and pottery often use a work surface or a turntable of stone, bark, wood, ceramic, or wax. With the exception of the pinch pots making a pot truly in the hand is a technique normally reserved for the smallest containers.

The shift from wheel-thrown to table-made pottery is not simply a deterioration of the ceramic industry. Wheel-thrown thin-walled wares have considerable advantages over hand-thrown, firing and firing requirements. They are less practical given the ease with which they are broken. Experimental attempts to break thick-walled coil and jar provides an immediate appreciation for the solidity and durability of the containers. Pots made on a turntable of a lean clay could withstand the various falls, knocks, and drops.

However, in other aspects, the Late Bronze Age wares constitute a decline in the ceramic industry in terms of surface treatment and overall workmanship. Painted patterns easily rendered during previous periods vanish entirely. Thick heavy wares replace the thin-walled elegant shapes of the Middle Bronze Age. However, darkened cores in the walls resulting from incomplete oxidation during the kiln firing do not signal a deterioration of the industry. Rather, it represents the prudent use of fuel and manpower (Franken and London 1996: 218). A higher than necessary firing temperature could

at times result in a pocked surface appearance due to the decomposition of lime band in the clay such as in terminal Late Bronze Age wares from Lahun (van As and Jacobs 1995: 17). Whereas heavy, white firing slips provided an adequate surface for painted pottery at the beginning of the Late Bronze Age, towards the end of the Late Bronze Age, the slips became thinner and, if the temperature exceeds 650 degrees Centigrade, the lime in the clay under the thin slip popped, thereby creating a pocked surface. Similar circumstances have been documented previously for the Late Bronze Age wares found at Dayr 'Alla (Franken and Kalsbeek 1969: 172-74). Many factors contributed to the decision of potters to eventually stop painting pots and reduce lino firing time (Franken and London 1990).

Techniques of Fabrication

Most Late Bronze and Iron Age pottery assemblages include pottery that is more than one manufacture technique ranging from the use of coils, slips, pinch pots, wheel throwing. A technique often employed comes with a patterned pottery wheel or slip. The wheel throwing technique, although best exemplified by the Neolithic wares such as found at Jericho, remained a useful technique for small pots throughout antiquity. Molds are always vital for forming both round and large open forms. Slabs and wheel-thrown rectangular containers, coils and throwing are among the more versatile techniques.

Coiling. To coil build a pot involves the use of rolls of clay which are added one on top of another, gradually increasing the height of a pot. Often a potter is obliged to wait until one coil dries sufficiently to not crumble before the next coil can be joined. Coiling is a reasonable way for many potters visible in the construction of some vessels. Potters can also use coils as one step of a more delicate technique which also involves turning or forming. After adding a flat-bottomed form from clay coils on a turntable, the incomplete pot dries slightly. At the appropriate time the pot could be turned upside-down in the turntable to scrape away excess clay from the lower body and for base shaping (Figure 3.1 and see below).

Coils can also be applied in a solid mold in a spiral pattern emanating from the center of the mold. Alternatively, potters can place a large circular flat slab of clay in the bottom and up to the edge of a mold and then add coils to increase the height above that of the rim. The latter technique characterizes late second millennium cooking pot manufacture.

Pottery made of coils can sometimes be identified by the coil joints visible in the cross section of a pot. In such instances, one can measure coil size to correlate with other pots from the same site and elsewhere. Direction of the coils can also be ascertained and can vary when possible both for pots within and between sites. Coiled pots often have an irregular overall feel when handled. Some coiled pots break along the coil lines, thereby providing evidence of their manufacture. Coils are often added to an open form made by the coil method as described above. The result is a combination technique used to create open and closed forms. In such vessels made by the combination technique, coil breaks are discernible only on the upper part of the bowl. Coiled shapes include almost all pottery forms, such as jars, bowls, jugs, cooking pots, etc.

Pinch Pots. A ball of clay opened by inserting a thumb into the clay creates an open form in the shape of a cup or shallow bowl. To work the clay and open end, the thumb wall the pottery rotates on the palm of one hand. The maximum size of the bowl corresponds with the ball size of the potter. This technique's most variable open vessel forms include storage vessels, water jugs, and ovens. In the pinch pot technique, the clay expands naturally into a bowl form, but it is problematic to control the clay to close the shape. To create a closed form, such as a jug, normally requires joining two bowls together and then adding a separately made neck.

Slabs. Similar to coil manufacture, slabs are used to create large, oversize and/or rectangular forms. This technique involves the use of individually-shaped rectangular slabs of clay rather than coil rings. Large vats, cooking storage pots, and baths given their size and intended use, are most suited for slab manufacture. In a photograph of a vat from the Raghdan Royal Palace, Lombard, 1980, the almost straight pattern of vertical and horizontal cracks visibly reveals slab manufacture. Yassine (1968: 43, Pl. 11) correlates association with the Phrygian material culture often display rectangular break patterns typical of slab manufacture.

Molds. External and internal supports or molds are useful for the manufacture of large open and closed forms. Mold manufacture is also an efficient way to construct vessels with rounded bottoms. Another advantage is that the mold can serve as a rotating work surface as well. Potters can spin the mold with one hand and work the clay simultaneously.

Cooking pots of the terminal Late Bronze Age were made in a mold and, in contrast to most other shapes, maintain their integrity

into the Iron Age despite developments elsewhere in the ceramics industry. Potters simply used a fired clay or stone bowl with a thin circular slab of clay. The clay, disc-like shape came up to the rim of the mold. To increase the height and shape the cooking pot, the potter added coils and formed into the clay (Fig. 3.2). The point of cancellation of cooking pots, a natural point of breakage, marks the end of the mold and the first coil join.

Another important form is a wide and heavy bowl of Iron Age I. It has been identified at Davi. Although it runs from Phase F up to the eighth century when it disappears from the picture. Rim diameters range from 40–60 cm and the bowls are twice as wide as their height. A thick circular slab of clay was placed into a mold above which a coil was positioned and shaped into the rim. At first, the bowls were completely burnished, but subsequently this laborious practice was limited to the interior vessel alone. Frankenstein relates this large vase with the traditional *basin* or *basin* bowl used for special occasions. Frankenstein and Kishorek (1973: 20, Plates 1 of Early Bronze II) were constructed in a special kiln (London 1988: 119). Mold manufacture is one of the best ways to shape large, wide open vessels regardless of time or place.

Leaving on a turntable. The technique of the pot on a turntable creating an evenly thick form that will be repeated in a later stage at a later stage in the manufacture. In this type of manufacture, the parts of the pot are constructed through the course of hours, days, or weeks, depending on the weather and rate of evaporation of the water from the clay. To shape a pot on a turntable versus throwing a pot on a wheel, requires procedures that would leave different evidence in the wet clay.

Potters start by positioning a cylinder of clay on the turntable work surface. They insert a finger or stick into the clay to open it and then extend the hole with one hand while rotating the turntable with the other. During this initial stage of manufacture, the vessel rim receives its final form. After cutting off and removing the pot from the turntable, it is set aside to dry. After the walls dry, sometimes what the pot is rotated upside-down on the turntable to allow the potter to very carefully scrape away the excess clay. This task requires the skill of an experienced potter to avoid excessive scraping, thereby making a hole in the wall or creating a pot of uneven thickness. If the latter would impede the drying stage and result in cracking during the subsequent firing stage. Once the lower exterior body has

very thin and a 'turner's' small coil is added to the base to form the ring base. Disc bases are carved directly from the excess clay of the lower body. In the extreme case, the potter continually removed too much clay while scraping the walls; the entire base at times was cut away and replaced by a wet clay heavily tempered with organic material such as dung (Franken 1992: 153). A clay rich in organic material would dry faster than a more dense clay. In order to be worked into the base, wet clay was required. To enable it to dry as fast as the rest of the pot, the use of a heavily tempered material was necessary. For a higher trumpet base, a cylinder was shaped on the turntable to create either an open or solid form; this was then applied to the lower body.

Lumps were made from a small lump of clay on the turntable or perhaps from a cone of clay affixed to the turntable. After shaping the body while rotating the turntable, the nozzle was pinched and the lump was cut off with a thick lower body and set aside to dry. Once the rim was dry enough, it allowed for the lower body to be set aside. As soon as the lump was in the hand, irregular variations across the base resulted from this operation. They were smoothed away or, if necessary, left as evidence of the workmanship.

Trumpet or disc base turntable. A slow-moving technique to quickly create small vessels, open and closed, or to shape part of a pot made from an untempered clay. It involves pinching and cutting off clay from which a series of pots could be scraped. This best accommodates small bowls, jugs, and accessory pieces that can be scraped onto the mother without the need to center small amounts of clay for each pot. Another advantage is that the weight of the clay on the wheel helps to maintain momentum between each pot. In this case, a turntable not normally used to throw pottery acts as a thrower's wheel. After shaping a vessel, potters cut it from the cone with a knife or string and allowed it to dry.

Throwing. To throw pots on a fast-rotating heavy wheel capable of maintaining responses that two hands be free to manipulate the clay to create the desired shape. This technique known from earlier times did not persist into the Late Bronze Age in the region of Amman or, for that matter, throughout most of Jordan and Israel. Rather than the thin-walled thrown pots of the Middle Bronze Age, thick-walled heavy wares predominated as potters returned to the use of coarse lean clays in place of more plastic clays. Not until the Iron Age II did the art of throwing reappear on a large scale, perhaps

as a result of Assyrian influence (Franken 1991: 75 and 80). It was at this same time that cooking pots were first thrown, rather than mold and coil built. Throwing involves the use of support potters and assistants who devote extra time to clay preparation. Ultimately, throwing allows a potter to increase production, which can reduce costs in the long run.

With the thrown pottery came changes in the clays and temper-plastics. Heavily tempered iron clays were replaced by those with smaller amounts, even for cooking pots which had remained unchanged for millennia in terms of the preferred tempering material. Coarse calcite tempering in cooking pots, a tradition known for thousands of years in the region (Bey 1989: 26), was replaced by fine grained quartz and calcite when for the first time cooking pots were wheel thrown and no longer depended on the old which had maintained the shape for centuries (Franken and Seaman 1990: 107). Cooking pot shape changed from wide and open mouthed to high and narrow mouthed wheel thrown. At the present a precise date for the return to wheel-thrown wares would be misleading. Detailed studies of sixth century BCE wares from Jordan will eventually provide a date.

Following the general description of pottery production, attention turns to specific aspects of sixth century Jordanian Pottery. Between Iron Age pottery, the re-emergence of burnished surfaces of late material, and the return to wheel throwing, and the repertoire itself. Each of these subjects is briefly discussed below.

Burnished and Slipped Iron Age Wares

Burnished, compacted and shiny surface treatment characterizes certain Iron Age pottery. When did burnish begin, and when did it become a dominant feature? Any issues related in the literature (Holladay 1991) and are of chronological or even to those involved with the construction of pottery typologies. There are no simple answers to these questions because burnished surfaces include many categories. Burnishing, as part of the surface treatment, can be the intentional compacting of the pottery surface that is fired to an appropriate temperature resulting in a sheen.

Keaso and Thorley (1943: 105) record the loss of burnish sheen at 970 degrees Fahrenheit for Tall Ben Mirsim Iron Age wares. My experiments with a European clay resulted in a high sheen when

aged to 700 or 800 degrees. At 800 degrees the surface became less shiny and by 900 degrees the sheen had almost disappeared.

As part of the shaping process, burnishing, as noted above, is a product of surface compacting due to scraping away impurities — partially by pot. If fired correctly, a surface sheet will result. In some or not in both instances, a compacted surface will lack a sheen — the pottery's surface may be fired. Nevertheless, the pottery was burnished, i.e. the surface particles were rubbed compacted and sized in one direction. Intentional or otherwise, the burnish can cover the pot or be limited to a patch — either on interior or exterior. Interiors might be burnished immediately to create a smoother, harder surface against which impurities would scrape. Alternatively, the exterior might be intentionally burnished to enhance its aesthetic appeal. Burnishing, limited to the mid- and/or lower, is a final stage, suggests that it represents a final phase in the shaping and finishing of a pot to remove unwanted clay from the wheel and possibly, variation and sources of burnishing is a reflection of pottery, a state at which it started.

Once an intentionally burnished surface is first slipped. Although one might conclude that it would therefore be easy to distinguish between unintentional and intentional burnishing, i.e. the presence of a slip layer is purposeful burnishing, slips are as easy to distinguish with the reader. Slip, Level, and burnished. Unlike the compacted surfaces might lack the smooth sheen due to improper firing. Likewise, the presence or absence of slip is not always readily apparent, as the slip is thick and of a different color than the pot. Like burnishing, slips are both unintentionally and intentionally applied. They consist of the finest clay particles, exactly made of the same clay as the rest of the pot or another clay. The surface will be the same. Coating agents can be added. Slips, thick or thin, can be applied in a number of ways.

Unintentional slips are the result of the final smoothing and finishing stage of the manufacture of certain other pots. After shaping a pot, the potter might tap his hands into the surface of the clay, which is used throughout the manufacture to lubricate the clay and then cover the pot with scraping wet hands with water and the finest clay particles held in suspension, thereby creating a slip layer, either naturally or otherwise. As a result, like burnish, slips present a challenge for non-potters to recognize.

Regardless of the earliest intentional or unintentional slips and

hypothesis, there is little reason to assume that they will appear systematically throughout a region. The presence of burnish, in particular in pieces, a new manufacturing technique rather than a new surface treatment. A change in slip material, for whatever reason, was one factor in the deterioration of painted designs on Late Bronze Age pottery. Without a suitable slip, i.e., with good adhesion, the paint and slip flaked away from the wall. The solution was, the potters found, involved a change in the manufacturing technique that simply a change in the surface treatment alone. The potters then scraped and scraped the back walls to remove the old deposit. The first reduced slip adhesion and, in so doing, the microcosms of the paint. The thinning process led to an unintentional burnish, whose absence was noted at a certain point in Iron Age pottery. While archaeologists discovered a new surface treatment, burnish, originally it is part of the thinning process which contributed to resolving the poorly painted vessels of earlier pottery. However, it did not become the best solution, and all factors came into play, including scraping at the right time to clay dryness and proper firing conditions. It is important to focus on aspects of the work, each decision taken by the potters in the successive stages of the work. The final product is the result of repeated trial and errors, experimentation, mistakes, and luck.

Iron Age I Collar Rim Store Jars from Tall al-'Umayri

During excavations at Tall al-'Umayri, Douglas R. Clark uncovered 130 collar rim store jars in an Iron Age I pillared building (Fig. 3.1). They included a large assortment of decorated vessels. In addition to the jars, the well-preserved building contained six bronze weapons, and the disarticulated skeletal remains of two men (Clark 1996: 241). One jar held carbonized barley (Clark 1994: 345). Although a considerable literature exists about collar rim store jars (Issac 1997), they nevertheless have remained unknown in terms of their manufacture and production. Yet at 'Umayri, the large number of pieces enables a systematic study of their manufacture which is currently underway at Walla Walla College. This is the only Late Second millennium vessel type found in sufficient numbers at 'Umayri to allow an assessment of its manufacture. Aspects being examined include the details of the manufacturing techniques and variation and characterization of the clays, evidence of the work of individual

na, pottery firing technology and standardization of size and shape. Given its relatively wide distribution in temporal and geographic diversity of vessel form is predictable. The immediate implication is that a diversity in time, the jars were made in different places by different potters, using diverse manufacturing techniques and clays.

For the 'Umayri collection, variety in rim forms, collar number [1 or 2], shape, size, and position, clay handles, marks incised in the wet clay, overall vessel proportions and volume differentiate the jars (see Clark 1994: 144; 1997: 65-75 for variety of rim and collar forms). Both, pithos, i.e. large non-movable storage containers, and smaller jars are present. For Dayr 'Alfa, common store jars averaging 11 cm in height (van der Kooij and Hershkov 1989) conclude that one jar would hold at grain, but for weight have been too heavy to carry or transport (van der Kooij 1990). Clark notes that wherever the collar rim store jars are found in quantity they must have been produced locally given their considerable weight. He also notes that a nearly complete jar from Megiddo weighed over 2 kg when empty (Wengrow 1996). However, views the jars primarily as transport containers. Zertal (1992) has assessed the capacity of the jars to hold 150-200 liters of liquid which is three or four times the volume of a typical store transport jar.

Distribution

Collar rim store jars are well documented in the hill country west of the Jordan River and in northern Israel. In Jordan, examples are known from various sites within the region under discussion. For example, London (1974) and more recently Pappas (1996) have presented a survey of the jar distribution in contexts associated with public storage or domestic structure rather than in tombs, temples or royal residences. For this reason, the jars are rare in the lowlands of Canaan where domestic deposits are rare (London 1974: 44). In contrast, hill country rural settlements and at some coastal sites characterized by public rather than private infrastructure, examples of the jars are known. Although some jars are inevitably found in urban settings, this does not negate their primary function as storage or carriers in rural and public sites. Rather than diagnostic of a site, the jars reflect the function of a site and not the identity of the people who used them.

Characteristics of the Manufacturing Technique

Research on the characteristics of manufacturing techniques seldom progresses. Thus, a final description is not yet available. It appears, nevertheless, that more than one technique is in evidence. This may be due to the fact that the collection encompasses both small and large populations. A whole work surface of a potter was used for the pots, especially during the early stages of the work. The shaping of the pots came a combination of coiling and turning in a wheel, a manual equipment of manufacture. It could have taken one or two weeks to complete each pot, but the potters could have worked more than one simultaneously. If the potters can work in multiple processes at the same time, they are certainly more efficiently using one potter to make many pots with a coil. A base appears to have been made in the same clay mix used to be some of the vessels that are seen. Perhaps this means that when the coil is used, it was more of a process was more as well. For a large pot, the potter would have been to say, "I will do the thickness of the work which would have been of days." The potter would not be a specialist or a craftsman would be a rapid turner and a potter would be a producer of the vase body, whether or not. In the transitional seasons of spring or autumn, when the night becomes cold, could not be a potter. The clay would dry, not always being during the height of the dry season. Following each stage of work, a clay potter would dry to be a potter still, but to season it would be the first wet clay and then. After that, the potter is probably involved with the shaping of the mud and moving of the pot over the wheel, a sign of the clay, especially when wet.

Once the work is an alternative to a potter, a potter, if a throw is with clay slabs as in place, a technique seems to be a potter. The use of the manufacturing is a very visible. The end of the break in the stone pot constructed. This is a good tool to work along the edges of the slabs, which are like the slabs mentioned above. In an instance, this technique, the Umayyad potters are certainly using a method. One of the characteristics of a potter is a variation of the thickness throughout a vessel. For a Umayyad pot, a vessel with thickness can vary from 1 to 10 mm over a distance of only 12 cm meters. A potter can this thickness, however, to create even being and to prevent collapse. The clay when wet remarkable skills, a procedure for necessary for other vessel forms.

Many variations exist within coil construction. Coils can be long short thick thin applied on the exterior exterior or on top of each other clockwise/counter-clockwise. If the adhesion is good jars will not break along coil joints. Normally adhesion is not a problem since lean or short clays, i.e., those containing abundant inclusions are ideally suited for coil work. The inclusions range from fine to large in size and include pebbles, minerals, grog, and the voids of organic material. For the 'Umayri jars, the paucity of large inclusions equate to wall thickness and the relatively small quantity of complexity is striking. Microscopic testing of the clay in cross-sections of jars is not possible with a reduced resolution of the scanning electron microscope. (Pitt and Smith 1991: 154)

The Body. Evidence that the jars were built slowly over the course of many days is seen in the wall thickness and the size of the shape rounded, conical and flat at the bases. It was not possible to build a jar all at once from base to rim. Observations of the coil break patterns, movement of the clay wall thickness, striations and set-off impressions, and testing procedures imply that the slow building process was more like the construction of a first the lower body was built by shaping a fairly thick solid form six to eight centimeters high in which coils were added to increase its height as the clay stood on the ground drying. A drying period followed before more coils could be added. This was followed by another drying period. As the jar rose in height the clay wall began to expand outward. To prevent excessive outward expansion and to keep shape the pressure of the clay and shape of any drying again were maintained. Lower body sections as well as exterior surface area were sagged. The work in progress would be removed by the projections would remain in the clay even after it was fired.

The lower body wall of the collar rim jar is uneven and varies widely within individual jars. One of the thickest areas appears to be at mid-body and/or below the shoulder. This area may well have been used as a storage area. It was built by hand and shaped as a vessel rotated on a turntable. The turntable or its point may have rotated almost like a fast wheel due to the weight of the clay thereby allowing the hand to create a thin wall. A very strong shoulder was added to shape the shoulder wall and of the thickest parts of the upper body. Jar #11 the shoulder measures 1.5 cm. whereas the wall below thins to 1 cm.

before thickening again to 1.4 m. As the potter forced the clay to close toward the neck, ripple marks of contracting are discernible on the interior. The potter had little control over the thickness of the shoulder wall. Of greater concern was forcing the clay inwards to narrow the opening for the neck. Additional ropes were wrapped around the upper body, just below the lower handle join of jar #14 to help prevent the clay from expanding outward. Impressions of ropes are clearly visible as is the join where the upper handle attaches. After a short drying period of one or two days were used to shape the neck and rim.

The Rim. Rims are thickened on the exterior. Some collars on the shoulder appear to have been made from the extra clay as the clay formed the rim. Once the rim was finished and shaped as the vessel rotated the potter pushed down the excess clay to position it on the shoulder in the form of one or two collars. Only infrequently does the collar appear to lift off the shoulder as if added separately. The last step for the upper body was to add the handles and perhaps a cross mark into them. Though impressions can be of the top as well as the bottom of the handles. Some handles clearly were made of clay containing extra organic material to facilitate rapid drying. The handle was cut from the thick band only a short distance to that of the drying thumb wheel only. Potters of the drying wheel used the handle to rotate. One jar from the collection has a large pre-firing design on the shoulder.

The Base. The final stage in the process was to complete the base. Once the rim and upper body were finished the jar was turned upside down to do work on the base and wet ropes. More than one person was needed to lift the jar at this point. Although the rim and upper body were dry enough to support the weight of the jar, the base, which remained closed from all air circulation remained moist and wet. At this stage, some of the excess clay ropes can be visible near the foot of the jar. In drying the base, but further work was required to clarify the variations. Two major differences are thick versus thin bases. Potters had the option of leaving and using the thick clay of the original base and adding to it, thinning it or removing a center. For some jars the evidence is clear that the wet clay of the initial base was cut away to create a thin area then filled with a plug of new clay heavily tempered with organic materials. As the variable related a thin wall-ri-

base was fashioned. An abundance of small rectangular voids from burnt-out fingernails characterizes the new clay and base in contrast to the lower body. On the interior of jar bases, one sees subtly irregular wavy spirals of ridging with the heavily textured outer clay. One jar base looks as if it was worked with quite wet hands. There are still a few places at the wall thicknesses of the lower body and base. For jar #17, the area immediately above the base measures 0.5 cm while the center point of the base measures 0.8 cm thickness. Places where the wall measures 1.0 cm are seen as a slight bulge and a break line representing the new clay protruded for the base. Certain smaller jars have a well-turned, extremely thin base, as if rotated upside-down on a turntable. However, there is still a considerable discrepancy and irregularity in the overall wall thicknesses.

Like most other bases, jar #17 cut through, and away. If at the lower rim, clay seems original clay was present. Elsewhere, the clay particles were added. For yet other jars whose bases measure over 1.0 cm thickness, the thicker clay, clay which perhaps had already dried in place, potters added thick layers of additional clay. Above the base, on the interior, we wish to suggest that there are variations: horizontally and concentrically. One rotates the jar to find that the sides of one jar are decorated with one kind of spiral. Yet on the other jar, placed in a neutral position, the spiral strokes still look marks as if the exterior lower body was treated entirely different than the interior.

One further scenario for creating the base involves the use of a mold. In certain examples, a clay surface on the exterior surface was noted by potter T. Emerson of Walla-Walla College, who suggests that this was intended to prevent the base from sticking to the mold. The mold would have enabled the potter to rotate the pot gradually during the early stages of base and lower wall manufacture. Initial use of a mold would have allowed the potter to completely finish and smooth the interior base as appears to have been the case in some examples. A mold would also allow the clay for base to remain thick and wet during the early manufacturing stages until the potter was ready to turn the vessel upside down and shape the base. Emerson's personal communication (1981) also suggests that perhaps some bases remain extremely thick to form as the clay became too dry and it was too late to turn away the extra clay.

Significance of the Difference

Given the potentially long period of use that large jars and pithoi can have, spanning 100 years if not more (London, Egoumenidou and Karagorghis 1989: 70), we perhaps have jars made in successive and/or overlapping manufacturing techniques. Once positioned in a depression (e.g. etc.) below the jars presumably were not removed from any of them. A cracked pithos base might have remained in place while a new jar was nestled over the same space. Alternatively, portions of the assemblage were all made roughly at the same time, but represented distinct manufacturing techniques, the techniques and clays used, a variety of pithoi (Fig. 3.12, 100) considered to jars as most likely the product of a specific pottery tradition, probably identified by the local potters and in some cases spread being "exogamous" thus kin based." While it is possible that diversity in the Levantine assemblage reflects the work of potters who were related to each other, no new evidence regarding their genetic relationship is lacking.

Reputation of Ceramic Containers

Late Bronze and Iron Age pottery, known initially from isolated tombs and restricted deposits, is now better represented at more recently excavated sites (Herr 1995). The work of Lagendy and Sauer (1972), who published Hishan sherds immediately after the field work, had a significant impact on Iron II studies in both Jordan and Israel. Dornemann (1966) has compiled representative ceramic material from Late Bronze and Iron Age sites and pots throughout Jordan, including the Amman area.

Late Second Millennium B.C.E.

At the present, Late Bronze Age pottery remains less well represented in central Jordan than at so later Iron Age material. Imported Cypriote and Mycenaean wares, the hallmark of the Late Bronze Age, are present, but not in large numbers. Certain painted shapes were certainly imports, especially Cypriote. Details and painted sherds from excavated contexts in the Amman Citadel represent

local versions of the Late Bronze tradition of pottery painting (Dornemann 1983: 21-22). As for non-imports, Dornemann (ibid.: 31ff.) relates the assemblage to that of Israel. Among the Jordan Valley Late Bronze Age material from Dayr 'Alla, the majority '90-95% is made of fine clays, while Franken attributes the foreign pots which are a feature of the site throughout its history to people coming to the site from elsewhere to celebrate sacred significance (1962: 113-4). Characteristic of the earlier deep bowls (type 1) is a high wall with a ring base, gentle carination of the shoulder and a rim rolled to the exterior (Franken and Kalbeck 1969: 133). Small, thin-walled bowls are present in a wide variety of rim types. Cooking pots are mold-made with a plain rim, the typical Late Bronze 'flaring rim' version.

At 'Umayri, the typological analysis of the LB I Age assemblage is a lack of continuity with the Middle Bronze repertoire as well as a new period in ceramic technology, which Hermon (1972: 10-12) attributes to the regionalization of pottery production. He further comments that this is particularly true of the cooking pot, to which he has not yet found a similar form elsewhere. Even if one immediately suggests that the research on 'Umayri Late Bronze Age wares, this supports the view that cooking, not a highly developed pottery tradition in Israel and Jordan, is the basic mode. Cooking pots at 'Umayri are a common vessel, with an exterior ring base, but not, perhaps, entirely unique to the site. The jug assemblage, with flaring rim as in some parts of Kerak and Jericho, is also not common, although yellow-brown ware covered with a cream to pink streaked slip are represented in contrast to the less often shagreened bowls. Hermon (1972: 231-3).

At 'Umayri, a painted biconical jug of Late Bronze Age type represents a minority of the decorated archaeological assemblage (Jordan, Ph.D. thesis, Smith 1991: Fig. 23.14b). This species most frequent along the Levantine coast (Amorim 1985: 117). An Iron Age II flask with a pie-shaped painted pattern lines a parallel in the Amman Nyxia and a Madaba tomb collection rather than any from Israel (Hermon 1991: 243). As for undecorated wares, 15% of the pottery deposits which Clark (1994) exposed, include the large collection of a rim-strewn jar, now laid above. Rather than repeat the tomb finds, whose date and origin are always debatable, the pottery is referred to the study of Dornemann (1983: 31ff.).

Early First Millennium Pottery

Tenth-ninth Centuries Pottery of the tenth and ninth centuries is not as well documented as the late second millennium BC pottery at stratified sites in the 'Amman region. However, outside the immediate region in the Jordan Valley at Tel Dahi, Alia, Franken and Kolbbeck (1969) describe early Iron Age pottery which is rather decorated other than the pilgrim flask (Franken 1961: 80).

Eighth Century For eighth century pottery from the central Jordanian plateau at Tall al-'Umayri, Herr (1980: 207) describes differences in the tenth and ninth centuries ceramic traditions for certain forms. Other forms, however, display greater similarity to the Iron II corpus designated as Ammonite. Both wide and narrow mouthed with globular body, cooking pots are present. The former have thick everted rims with a ridge below. Bowls include a category with shallow everted rims which Herr (1980: 208) classifies as 'Ammonite' but is not known from 'Umayri and the 'Amman Citadel. Ammonite bowl types include simple hemispherical forms. Kettles with a bold mouth thickened elongated rim characterize 'Umayri and the 'Amman Citadel as does the 'ammonite form found by Herrmann at 'Umayri. Halimani's pithoi with thickened bases and very low shoulder ridges (Herr 1980).

Franken characterizes eighth and seventh centuries pottery from Dayr 'Alia as international in character and strongly related to West Bank ceramic traditions (Hollies-Friederig and Franken 1960: 21). 'Burnished pottery is abundant until the twelfth century, throwing not only producing a fine wheel vase. It is also found that turning and often results a form pleasing to our sensitivities. Potters who did not throw pottery would have not been able to compete with the new technology. But even before the appearance of wheel-thrown pottery, small burnished bowls and cups with straight rather vertical walls and flanges attached to the rims were excavated. Dayr 'Alia Phase C. Burnish strokes on the interior and exterior obscure all evidence of turning and Franken is not convinced that they were thrown despite the 'no wavy and plastic clay. Made of clays not typically of the Dayr 'Alia region, Franken regards the abundance of such pieces as a Madaba import implying a workshop perhaps in the region of ancient Amman (Franken 1963: 14).

Another collection of small, wheel-thrown cups recently excavated at Tall al-'Umayri consists of seven sack-like cups which were thrown

from a hump and date to the sixth century (Herr et al. 1995: 65; London and Clark 1997: Fig. 16). The cups were cut from the hump with a piece of string, leaving concentric circles clearly visible. Along with the cups were thin-walled bowls with triangular shaped rims, hemispherical bowls and flat-based cups. The small ridge below the rim characterizes all of the bowls and cups. Although small in size, the cup walls are thicker than those of the bowls. The flaring-walled bowls display wide-spaced, narrow burnish strokes on the interior.

The first wheel thrown cooking pots at Tall Dayr 'Alla were excavated in Phase G, towards the bottom. There were wheel-thrown jars and lamps which were thrown from the same. Frankel and Kinsbreek (1969: 145). However, terminal Late Bronze and Iron I II cooking pots from Tall as-Sa'diyya were always made from a sherd of clay which was pressed together to form a whole cookware vessel (Vidlers 1993: 149–50). In contrast to the Late Bronze Age cooking pot, a turntable was used to finish and smooth the exterior of the Iron Age cookers. This creates a smooth and uniform surface (Vidlers 1993: 149–50). One characteristic of the Iron Age pottery was a rounding of the shoulder area resulting in a less distinct projection between neck and shoulder regions. The co-existence of more than one way to make cooking pots is a multiple tradition phenomenon. Vidler (1993: 149–50) has identified four different fabrics and two technological types as represented among cooking pots varying in rim and body shape, wall thickness and narrow mouthed vessels.

Seventh Century. Excavations in progress at 'Umayri have enabled Herr (1991, 1995) to identify an Iron Age II assemblage as "Ammonite" in that it seems to pre-date and to be situated within the boundaries of ancient Ammon as defined in the literary sources. Herr presents a corpus of thick-necked jars and broad-mouthed jars with thickened rims curving inward sharply from the body similar, but not to those known in Israel of Iron II date (Herr 1991: 303; Fig. 34.1.7; 8–10). In fact, the seventh century repertoire is currently known with no comparable to early Hishan pottery also displays similarities with Tall as-Sa'diyya in the Jordan Valley as well as sites further away in Israel. However, another type of necked jar with a narrow opening, triangular thickened rim, and grooves on a nearly vertical neck, known from both 'Umayri and Hishan, is limited to

the Ammanite plateau of the seventh century. Large beal and Samir (Fig. 3.4:1) A similar necked jar now with a markedly sloping neck again is characteristic of the Amman plateau sites in particular. Large beal jar Samir 1942 #4-5. A handleless small jar with pointed base and thickened rim from 'Umayri, corresponds to a similar seventh century vessel from the Adon-Nur tomb in 'Amman. Jars with triangular folded rims of narrow diameter and a larger body than the rim characterize seventh century 'Amman sites. A short pot with a squat body, narrow rim, flat rim and rounded base is another jar form (Fig. 3.4:10). Narrow and wide mouthed pugs have been seen several and Dicker terms Cup-like rims as present (Fig. 3.4:12). At 'Umayri, painted amphorisk with incising on a sloping neck and a single ridge at the upper handle attachment have the stepped base typical of this period (Fig. 3.4:13, 14). The pugs consisting of three sets of five horizontal lines at the rim neck rim below the handle compares with a similar form from Amman north Her 1991: 401. Dipper-jugs with conical bodies, high necks and slightly thickened rim are of a type known throughout Jordan and Israel (Fig. 3.4:1). Jugs with globular bodies, flat simple rims and everted necks are similar to those from Jordan Valley sites (Ibid. Fig. 3.4:6). Two more unusual forms from the "Ammanite" citadel at 'Umayri are a short-necked jug and a rhyton in the shape of an animal's head (Fig. 3.4:1-12).

Along with bowls in a variety of shapes and rims, certain shallow bowls with inset or stepped rims known (Fig. 3.4:19-26) from 'Umayri, Hishia and 'Amman are best known to characterize the region of 'Amman (Ibid. and the Jordan Valley see Herr 1989-1991). Another small fine ware bowl with a strongly recessed exterior rim (Fig. 3.4:27) is known from the Ammanite sphere both at plateaus and the Jordan Valley (Amman, Hishia, 'Umayri and as-Sayyad). A bowl with an out-flaring rim and grooves above a slight carination is not exclusively in the Ammanite and Median spheres of 'Amman, 'Umayri, Dhiban (Ibid.: 305, Fig. 3.5:8). Bowls with a hole-mouth type of thick rim are present. A black finished shallow cratered bowl with everted rim and stepped base from 'Umayri is comparable to an example from the Tall Basma site (Kahn and Mazar 1961: 406). The latter is considered to be an import from the region of Amman (Herr 1991: 409). The Pansy type of Ammanite area display outflaring rim, rim and internal over-l wall thickness of rim and body (Fig. 3.5:9-15). Knobs adorn both kraters and bowls (Herr 1991: 241, Fig. 3.5:16, 17).

Cooking pots are of three types with the majority retaining the wide mouth, thickened rim and ridge below a form that disappears at the end of the seventh century. Herr 1991: 306, Fig. 3.5:19-20. Two handles extend from the rim at the point of contraction or neck under Herr 1991: 306 finds comparable shapes throughout Jordan and Israel. A cooker with a smaller rim, a globular body and two handles rising above the rimmed rim, is known from Transjordan only (Ibid.). Finally, necked cooking pots (Fig. 3.5:22-23) like those found in Israel, lack precise parallels in Jordan. This has led Herr to conclude that local variations co-existed until the seventh century and if the seventh century repertoire wide or narrow mouthed hole-mouth cooking pots with multiple grooved thickened rims continue in use (Fig. 3.5:24-26). Local parallels are found in 'Amman. Absent during this period is the cooking pot with a marked ridge below the rim. Although common throughout Israel and Jordan from the sixth to seventh centuries, this form vanishes by the close of the seventh century (Herr 1991: 306). The closest parallel necked cooking pot with a single rim is the one found at 'Amman and the 'Amman Citadel. A small wide mouthed pot with a rimmed rim lacking a neck and two handles which rise above the rim (Fig. 3.5:27, 28). These pots are known from 'Amman, Hesban, Sahab and the 'Amman Citadel. The disappearance of the open mouthed cooker also signals the beginning of what is now known as the 'Amman and Hesban styles of the seventh century. The rim and neck of these pots were no longer decorated with a rim and a ridge below the rim. Along with the change in shape and method of manufacture was the necessary change in the pottery material. Rather than the traditional use of locally produced clay, the seventh century potters turned to non-plastics, both carbonaceous such as slate and quartz were suitable. Another signal of the change in manufacturing technique and inclusions is the firing color. For the first time cooking pots achieved the fully oxidized red color. For Iron II cooking pots with the exception of the Jerusalem excavated by Kenyon, Franken and Steiner (1996: 106-7) document the "liberation" of cooking pots from clays, each scraping in the Jerusalem style. The Iron II style of the sherd is a wide mouthed cooker with a rim and a thickened rim resembling the Iron I style pots. However, the ridge below the rim was pulled up to the lip to the extent that a small groove remained between the ridge and the lip (Ibid. 1996: 107). As a final change, the rim became a rim.

Lamps display one pottery, a wide sloping rim that was and a worked ring or disc-like base (Fig. 3.6:1). In a later possible exam-

ples of closed lamps have been found at 'Umayri (Herr 1989: 305 and 1991, Fig. 362-3).

Flat-bottomed basins with straight sides and everted rim continue as do the black-burnished bowls often referred to as "Ammonite ware" (Herr 1991: 118). According to Herr, examples from all the 'Umayri Iustrate by Ammonite corpus, representing the Transjordanian plateau and southern Jordan Valley (1991: 214). The earliest expression of this repertoire, such as *Ammonite ware*, is not found. Perhaps it does not present itself all at once, but involves the combination of pot types from previous times. Certain forms do continue from the ninth and eighth centuries, while others are new. Although Herr finds parallels to specific shapes in Jordan and Israel, some others are unique to the Ammonite plateau and Jordan Valley, while all others can be characterized by *Ammonite ware*. Certain shapes found in 'Amman seem to have the best parallels in the Jordan Valley.

As for the repertoire as a whole, Herr notes Sauer's suggestion that the Iron II repertoire continued well into the sixth century. The work of Luginbuhl and Sauer (1972), along with more recent excavations, allows Herr (1991: 242-1995) to concur with Sauer and provide the evidence concerning continuity of the Iron II repertoire into the Persian Period. One equal suggestion is Herr's conclusion (1991: 246) concerning the different developments in Israelite Jordan in terms of pottery repertoires. Whereas a separation of the Iron II repertoire from Iron II and Persian period is seen in Israel, he would not characterize Jordan, where the Iron II repertoire continues well into the Persian period. One further inference is that the famous petrologists' desire for ceramic collections are simply ideas that transcend historical development. Continuity of the repertoire tradition is rational from the perspective of the pottery, which is inclined to change and then that works. Rather than being conservative in nature and having no to experiment, potters maintain their tradition for other reasons. Pottery manufacture involves a complex series of choices. Any change in any aspect of the work necessitates changes in each successive operation. Inclusion type and size can require modification of the surface treatment, which will no longer adhere or a shattering to be repaired, moving in clay is no longer a possibility. A better change would be in the firing temperature, and longer firing, crushed ceramics can withstand higher temperatures than large angular ceramic crystals. With a new inclusion type or size can come a different shaping technique to build the pot as well. All of

these types of changes occurred to create the new cooking pots. A change in the clay non-plastic shape and manufacture of the cooking pots might also signal new developments in the organization of those who made them. While the limited distribution of calcite perhaps restricted their manufacture to a relatively small number of potters with access to the calcite, the use of powdered carbonates and/or locally available materials could signal the involvement of a larger number of potters making cooking ware than previously.

Of the Iron I and II sherds sampled mineralogically by petrographic analysis, a few preliminary statements can be made concerning the origin of the pottery excavated at Umayri. The group 1 and 2 ceramics, as well as Petrographic samples of sherds from Umayri and nearby hundred sites, occur in the same clay matrix. Petrographic Group 1 contains fine grained calcite, basaltic feldspar, quartz, and numerous dark green and orange vesicles of leucocrystalline calcite, but no iron. Age II sherds from Tell al-Umayri and Jericho, on the other hand, have a later Iron II and III fabric (Hart 1990: 140). This again confirms the continuity of the Iron II repertoire, both in terms of vessel form (as noted by Hart 1995), as well as clay matrix, into the succeeding era.

Petrographic Group 2 is a very low calcite pottery, similar to Iron II vessels of the same technology from Umayri and Tell al-Umayri. The species in this group include a large-mouthed vessel, a stirring ring burnished bowl of good quality, and a narrow mouthed cooking pot (London, Plant, and Smith 1991: 434 and Fig. 23 [1, 2] and [3]). This group is interesting for several reasons. First, although the cooking pots are no longer decorated excessively from a slip to clay matrix reserve, or coarser. The cooking pot represents the new trend toward narrow mouthed and more homogeneous sherds. The petrographic group contains both large and thin sherds as well as a highly burnished bowl, as both groups used the same apparent clay, and produced from the same clay. The evidence suggests that the same potters could make black burnished bowls as well as cooking pots of large or thin sizes. Finally, the same clay matrix has been identified for two neighboring sites. Although evidence of pottery was made at a related pottery is implied, this does not suggest that one workshop was responsible for all contemporaneous ceramics. A wide-mouthed and wide rimmed Iron II cooking pot from Umayri belongs to Petrographic Group 3, characterized by coarse calcite

pot-plasters (London, Plint, and Smith 1991: 434 Fig. 23.111). This is the oldest-known cooker identifiable not only by its rim profile but by its wide diameter and coarse calcite inclusions.

Mineralogical tests indicate that black burnished bowls could be made by potters who used the same clay to shape other forms. However, not all black burnished bowls belong to the same category. For example, two sherds assigned as "Ammonite" fine ware and black burnished bowls (London, Plint, and Smith 1991: 434 Fig. 23.115 and 16) belong to Pottery Group 5, an undifferentiated collection of sherds which did not fit into the other categories, but remain largely as unique examples. The two black-bowls sherds contain a high percentage quartz but lack the marks of careful organization. It is conceivable that the quartz-rich matrix used to coat the thin-walled bowls is similar to that used for other shapes. Although the two categories' signatures were similar, this suggests that a slightly modified clay was used for the fine ware. It should be noted that the two bowls in this category are finer and more refined than the Group 3 example. One bowl is decorated with an out-flange rim decorated with concentric lines, a knob, and the bowl is a rimmed bowl with a simple lip above a slightly inset upper body.

A larger sample of sherds, jars and other shapes from 'Umayr and Hisban is presently underway (London, press). For other Iron Age II pithoi, potters' marks and potting techniques were also used to make fine ware (the Tell Jawa Pottery). A study of these sherds may explain if the large pieces using different clays were made at the same place or if one was body reserved as a finished ware product. A workshop where wares were shaped, fired, and decorated, but the organization of the ceramics industry reflects the pottery from Tell Hisban. The archaeologically sampled ceramics are deposited with the rest of 'Umayr and its hinterland sites. Minor pottery testing and analysis was done by the stratigraphic excavators for the pottery from a workshop which constructed its wares on both sides of several pottery production locations making structurally similar wares. As for small versus large vessels, decorated versus decorated wares, some black burnished bowls appear to have been made at the same place as the decorated larger shapes while the finest black burnished bowls belong to a separate ware type.

Throughout the Late Bronze and Iron Age, potters continued

two situations that they successfully resolved. First, they carried the second millennium problem of lack-waxed poorly decorated pottery, by creating thinner-walled vessels seaward and shared at part of a century. The seafaring season gave rise to burnished surfaces, a significant improvement over cooking-dipping patterns. It was masked by a salt crust on the surface of the pre-Bronze Age that initially may have been an unintended result of the seafaring. It was then, however, a desired new surface treatment with potters learned to control and exploit. It survives burnish and patterned surface ornamentations types were created. For the Late Iron Age, the strokes are discernible, although they might also be a salt crust type. Some may be the product of a long, glossy surface, as on the so-called "Samana ware." Similarly for the Early Bronze Age, it takes while, miss-spelling, but it is certain that the glossy surface can well be considered as a size yet still is a topic. It makes it is not a size. Fisher and Leach (1984: 90) say: Although in the Iron Age, burnish may have originated unintentionally, it became a highly desirable surface treatment whose development arose from the linguistic language of production rather than as a whim or copy of earlier pottery.

The shift to a slow wheel means that the society in the Terminal Late Bronze Age reflects larger, more significant issues than how pottery was made. A slower wheel implied slower production in contrast to a fast-wheel, mass-produced artifact to serve a society role (e.g. political and social services) or demands of which few could even use during most of the early Iron Age.

The second major development was the shift in the seventh century, in which a new, so long called the burning was fastened. This development allowed the rapid manufacture of pottery and accommodated the need to produce large quantities of ware.

Franken 1993:4-49). Perhaps due to the fast wheel, a smaller number of potters were able to replace pottery production centers. A change in size anywhere in the line of production impacts all subsequent steps, not only how the pots are made, dried, and fired, but also how they are distributed, including who made the pots and where. This is not to suggest that there was a sudden complete change with the introduction of the wheel. Manufacture of non-wheel-thrown wares continued just as Herr 1995 notes that Iron II shapes in general persisted into the Persian period. Techniques often

associated with the Late Bronze Age, such as hand-eg pots with coils, slabs and discs, continue in the Iron Age despite the fast-moving wheels (Franken and London 1995: 219). One technology does not replace another entirely since individual manufacturing techniques often continue with vessel type, such as coil and slab manufacture for pithoi. The manufacture of cooking pots and the large wheel-made bowl represent the continued use of pithoi to shape wheel-banded containers. Coil work continued for jars, large bowls and kraters, but often in combination with a mold of variable size to facilitate creating the vessel under construction. Pithoi pots were made for toys and other small containers and slabs were used for the largest, bulkiest containers.

There were new shapes, new clays and new surface treatments with the introduction of the wheel pottery. These co-existed with previous techniques. South of the Armonite area, in the region associated with the continuity of the ancient Phoenician pottery that C. Belmont excavated at the site of Busayra, displays the possible local transition from a slow-moving wheel for creating pottery to a fast-wheel for throwing pottery. The wheel-banded bowls, cooking jars and jars characteristic of the region could have been wheel-thrown. Paint patterns using a red and black pigment were developed locally. The use of a fast wheel in contrast to the previously slow wheel and the use of a fast wheel for throwing was a practical development, and throwing pots made on a slow-moving wheel surface (Hodges-Puig and Franken 1986: 100). Wheel-thrown pottery can be made efficiently without the need to rework the wet wall of a container, since it is covered with a fine-surfacing layer.

Capitulum

To carry out the various analyses needed to define local pottery production as craft traditions requires scores of wheel potters in addition to chemical and mineralogical testing. Also needed is a focus on pottery production rather than shape and surface treatment. Burnished surfaces, so characteristic of Iron Age pottery, represent craft shapes and manufacturing techniques rather than simply a waste of time on shiny pots. Once a better faster throwing technique became available, such as wheel throwing, burnish surface treatment disappears since it was part of an absolute system of shaping

pots. Given the distance from the Mediterranean economic centers and the diverse geographic regions within Jordan, one can conclude that ancient society in central Jordan maintained a local pottery industry. It not only absorbed innovations from elsewhere, but also introduced new ideas, techniques and improvements of its own.

Acknowledgments

The editors of this volume—Randall W. Younker and Betty MacDonald—are most gratefully acknowledged for undertaking this project. Thanks are extended to the Madaba Plains Project staff and directors, especially Susan Doreen Lawrence, T. Gregory and Tal al-'Umayri's Director, Larry Herr, for the opportunity to study the 'Umayri pottery. At Walla Walla College, Douglas R. Clark has made space available to examine pottery from Field B. During the 1994 season of excavation, Deborah G. Smith was the senior supervisor in Field B. Volunteers working at Walla Walla College to reconstruct the jars include: Edna Canchay, Adriel Chilson, Lori Jo Jacoby, Bonnie Seimovitch and Susan Ellis-Lopez under the direction of Hester Thomsen-Olsen. Potter Jean Furmerson of Walla Walla College has kindly provided her expertise. Carmen Clark-Johnson and Mercedes Nishan have assisted in many capacities. My own experiments were carried out at the Department of Archaeology, Leiden University in 1978. Finally, a generous grant from the Leon Levy-Shelby White Publications Committee makes possible the archaeological testing and publication of Hisban pottery.

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CHAPTER FOUR

'AMMONITE' MONUMENTAL ARCHITECTURE

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The so-called Ammonite towers or *minif al-ḥiṣṣ* are among the most characteristic form of monumental architecture in ancient Jordan. Their building material, namely stone, along with such features as stone floors, the guarding wall systems, and fortifications will also be discussed in this paper.

'Ammonite' Towers

During the last 150 years of archaeological investigations in Jordan more than 150 buildings have been identified as "Ammonite" monumental structures. These structures are of two types: (1) the tower type and (2) the fortress or citadel type. A little more than six percent of these structures have been partially or fully excavated. The diameter of the towers varies from 11 m (at Hassayn Sport City) to 28.5 m (Rujm al-Momani) m, with the most common type being 10 m in diameter. The size of the fortress ranges from 7 m² (Rujm Wanana) to more than 1000 m² (Rujm al-Kura). These megalithic structures (figs. 4.1, 4.2) built around 'Aminati have been a topic of discussion among archaeologists and historians since their discovery. However, there is still no general agreement about either (1) their number (without proper archaeological excavations no one can tell for sure whether we are dealing with a real tower/fortresses or with normal building complexes) or (2) their chronology date (the Neolithic 3000-4500 B.C. (McKenzie 1991: 23; Landes 1976: 284-86, 90-91; Early Bronze Age 4500-3000 B.C. (Watzinger 1935: 23-24; Iron Age I 1200-900 B.C. (Graf 1939: 165-67; Landes 1976: 284-85, 1961: 70); Iron Age I/II 1200-250 B.C. (Gese 1968: 10-17; Henssike 1968: 104; Föhler 1961: 71; Graf-Reventlow 1963: 132; Homès-Fredericq 1992: 200; Iron IIB C 721-539 B.C.; Thompson 1972: 62; 1973a: 47, 50).

1973b: 48-50; 1977: 29; 1984: 38; Ibrahim 1974: 12; Muheset 1975: 9; O. M. Crovet 1981: 136; 1986: 4; Ihart 1987: 43-68; Zavadine 1986: 154; Yassine 1988: 17; Younker 1991: 337-38; Abu Davyah *et al.* 1991: 906; Najjar 1992: 420; Persian (539-332; Yassine 1988: 17, and/or Roman 63 B.C. A.D. 324; Conder 1889: 111-12; 191: 112-13, 172-193, 207-251; Glueck 1970: 181; Boraas 1971: 40-47, 39-41, 43-45; periods? With regards to the function (were these structures fortresses or towers, agricultural centers and/or settlements? many scholars (Conder 1889: 113; M. K. 20: 41, 25-26; Glueck 1939: 166; 1970: 181; Landes 1956: 285, 1961: 68; Gese 1958: 57; Hentschke 1960: 104; Graf-Reventlow 1963: 132; Thompson 1971: 63; 1973: 50-97, 29; 1981: 38; M. H. 50: 9-10, 11; Shea 1981: 106; Yassine 1988: 18) consider these structures as military installations for providing an advance military defense system. Although Glueck and Yassine are in agreement that these towers were military installations, with their purpose to provide a system of defense for the eastern boundary of the Ammonite Kingdom against its external enemies, Glueck thinks that they were not only constructed but also operated as well by the Assyrians while Yassine is convinced that these structures were built and operated by local states and not by the Assyrians. Yassine (1988: 18) sees at some of the structures, e.g. the Ammonite towers at Khirbat, were in use as early as the seventh century B.C. He sees the purpose of the Khirbat fortress as being a seat for the military garrison and its commander. Moreover, he sees it as having served as a production center (1988: 18). Boraas (1971: 44), Thompson (1971: 63; 1973: 50; Zavadine 1986: 155; Younker 1989, 195; 1991: 337-39) and Moriam (1996: 93) take different positions. According to them, these structures were not military installations but agricultural settlements, complexes, and shelters.

The disagreement on the date and functions of the so-called Ammonite towers is due not only to their complexity but to the fact that there is insufficient information since many of them have collection of artifacts and heavy dependence on ceramics with the presumption that the material culture both west and east of the Jordan is the same.

An additional difficulty is the nature of occupation in these towers where many of them have been in use for more than 2700 years. Ruqay al-Mallat North stands next to the building of the Department of Antiquities on Jabal Amman. Boraas (1971: 43) who dug a test trench at the site dated the site to the early stage of the Roman

occupation in Jordan. Others have given a sixth-fifth centuries B.C. date for the same structure (published report to the Department of Antiquities of Jordan by Lagerberg Pedersen, see Yassin 1989: 17). Ruqm al-Malfuf South is now destroyed. A few sherds dated to the seventh-sixth centuries B.C. (Thompson 1973: 45) were found stratified with the sherds at the site. Iron Age I sherds were also found at this site as well as sherds from the Iron II century B.C. and later periods.

Cretaz (1980) agrees in dating these so-called Ammonite towers to the Iron II period (600–550 B.C.) but takes a different position on the function of the towers. She does accept their military function. However, because of their location on secondary slopes, back and back wards (for example, Ruqm al-Malfuf, Umm Udhayna, Ruqm al-Hinu, and Ruqm al-Hawi), and because of the good view they provide, she thinks that their main purpose was to protect agricultural installations and harvests from nomadic raids, rather than to defend the Ammonite kingdom.

Many scholars are inclined to follow Cretaz and thus to consider these towers as civil purpose structures, that is, both as agricultural and military installations. In practice, they were used by the agricultural population as storage quarters. This conclusion is questioned by scholars (e.g., Conder 1899: 193; Mackenzie 1911: 25; Glueck 1938: 106; Geras 1967: 14; Holmes-Frederick 1992: 193). In wartime, however, they were used as part of the defensive system either against internal threats (for example, to protect and defend agricultural fields, water sources, and goods against the nomads from the east, as well as to insure stability for local villagers (Cretaz 1980; Nagar 1992: 41) or against external enemies to defend the boundaries of the Ammonite kingdom (Conder 1899: 193; Mackenzie 1911: 25; Glueck 1938: 106; Geras 1967: 14; Nagar 1992: 41).

A closer examination of the location of these towers and their chronological sequence points toward evolution in their use. There is now more evidence that, at a certain point in the early history of the Ammonite state, towers were built exclusively as military installations. However, later when there was more stability in the region (pre-Exilic) and with the advancement of the institutions of the Ammonite state, non-military buildings were added and the character of not only the original buildings but the character of the whole settlement changed as well. This explains why the towers are clustered in certain areas and why some of them were built in strategic locations (on the summit of hills, where one expects defensive

as well as to be while others were located on slopes and wadi beds. This situation is paralleled in the modern history of Jordan, where military camps and bases expanded into towns and cities, for example, Zarqa, Ma'raq, etc.

Building Materials

As a result of the geomorphology of Jordan and its nature, divided into three distinct zones, namely Jordan Rift, plateau, and the semi-desert zone respectively from west to east, the building materials were used with preference for stone or structural materials. In general, preference was given to the local resources and the most available and cheapest materials were chosen.

Stone as a Building Material

Due to the scarcity of timber in Jordan, various types of rocks, namely limestone, basalt, sandstone, and igneous rocks, have been used as building material.

Limestone. Limestone of different quality, Mizzi Alumar, Mizzi Akhdar and Malake, occurs at numerous stratigraphic levels. Upper Cretaceous age stones are quarried from Irbid, Ma'raq, Zarqa, and 'Amman. It is not the main production of building stones, as it is found in large limestone deposits in the Ma'an area. These limestones possess a grey, even, the desirable properties of good quality stone, namely uniformity, low porosity, permeability, and strength.

Basalt. Basalt suitable for building is found in practically unlimited reserves. It occurs as scattered volcanic cones and flows at many locations from the Ma'an area in the south to the Yarmouk River in the north. Basalt deposits are also known in the area along the east side of the Dead Sea-Jordan Rift. In North-east Jordan, basalt flows cover more than 11,000 km² collectively.

Granite. Various crystalline igneous rocks are exposed extensively in southern Jordan and the east side of Wadi 'Araba. The exposed reserves are practically unlimited.

Gneiss. Gneiss occurs in large quantities in northern, central, and south-eastern Jordan and is usually associated with limestone.

Other Building Materials

Brick and material Clay suitable for brick production occurs in different places in Jordan. It thus offers a broad base for the development of a brick industry. Major clay/shale deposits are located in the 'Amman area. Clay is also found all along the eastern side of the Wadi 'Arabah-Dead Sea-Jordan Rift and in the areas of the deeply incised tributaries to the Rift. Mud brick houses on street level and trees have been the most characteristic features in the Jordan Rift.

Lime Mortar and Gypsum Lime production in Jordan has been known since the Pre-Pottery Neolithic period in sites like Bayda, Ghuwairi, 'Ayn Ghazal, and Basta. The limestones were converted into caustic lime and then later to a slaked lime. Plaster and mortar were prepared out of this lime. Another source of plaster and mortar in Jordan since the Neolithic period was gypsum. A gypsum deposit of the lens type is located in the 'Amman area in Wadi al-Hud, in a valley to Za'ara Ravine, Wadi al-Hasa, and Wadi al-Majra.

Masonry

In all the buildings discussed above, locally available stone was the building material. The mud-brick was used. Because of the tendency of the mud-brick to warp, trees (as was used to build the towers discussed above) were used in laying the streets in the 'Amman town at the 'Amman Citadel. Building bricks were obtained from the bedrock by the means of widening the already existing cracks.

Architectural Elements

There is not one excavated site in Jordan in which all the elements of Ammonite monumental architecture are found together. These different architectural elements such as stairs, courtyards, door pavements, bath rooms, floors, walls, underground water system, and other various elements from different archaeological sites will be dealt with

Stairs

Stairs were needed in buildings, particularly in towers with more than one storey. A split-level entrance with stairs was built in Rum al-Malfaf North for connecting the second with the first and third levels (Borhan 1972: 38). The steps are of field stones laid on their sloping tops. A flight of steps built in the same manner was found at Khirbat Najar (1992: 43) connecting the exterior of the tower with the interior. These steps led to a platform at the level of the ceiling of the ground floor. From this platform two flights of steps were built to give access to the rooms 11, 12, 13 and 14 (fig. 4.3) and to the towers. The wall of the latter tower is twice the average width of the wall to make enough room for the stairs.

Floors

Most of the towers discussed above were built on a level bedrock (fig. 4.4) which was leveled and used as a working floor (Najar 1992: 43). The floor of one of the excavated buildings at the Middle terrace of the Amman Citadel was of a local type of mud plaster (Zayadine 1973: 27; Zayadine *et al.* 1989: 362). Plastered water-carrying Lechilestone floors are also known from the Upper Terrace of the Amman Citadel (Najar 1992: 43; Mermaid 1993: 16) and from Lal Jawa Dayan (1993: 38). One of the most important discoveries at Khirbat Najar was a pillared house enclosing within the square structure. The structure and the house are stratigraphically later than the rounder tower (Najar 1992: 43). It is a courtyard-type house with a courtyard. A descending stairs leads from the entrance of the structure to the courtyard. The partition walls of the house were constructed by means of placing stacked or monolith piers (fig. 4.5) at certain intervals, then connecting the piers by one row of stone walls which were thinner than the piers. These crib-board-like spaces (fig. 4.6) were between the piers and were probably used as storage area (fig. 4.6). One such house built almost in the same way was excavated at Lal Jawa Dayan (1993: 38). There is a strong possibility that these were two-storey houses.

Underground Water System

Conder (1889: 34) noted an underground water system at the Amman Citadel as early as 1889. Further investigation of this feature has

been carried out since the beginning of the century (Vincent 1911: 49; Dornemann 1983: 90; Zayadine *et al.* 1989: 357). The underground water system consists of a relatively big plastered water reservoir (ca. 700 m³). A 23 m long passageway carved in the native rock leads from ground level to the reservoir. The difference in the altitude between the entrance of the shaft and the floor of the reservoir exceeds 17 meters. Occupancy in the area goes back to the Middle Bronze II and Iron Age periods (Dornemann 1983: 90). This underground system may have been in use during these periods. A very interesting piece of information is provided by Pohlis (1981: 104, *Hittite V*: 1). According to his account, the 'Amman Citadel' was supplied by Ammohus, Great, 23 B.C. only after the access (fig. 4.7) of his besieged to the underground water reservoir was denied. No direct evidence for water channels was found, and whether or not there was a spring inside the reservoir is difficult to prove because the floor is covered by cement.

Phoenician Architectural Element

Fragments of the so-called Hader (Zayadine 1973: 28) and Peto (Aeolic capitals (fig. 4.8) along with bases (fig. 4.9) and columns (Najjar 1993; unpublished materials) were found incorporated into later constructions at the 'Amman Citadel'. These fragments can be assigned with a great degree of certainty to Iron Age II (Stager 1990: vi; Stager 1992: 90). Stone pieces of moldings or of helixes stuck on top of each other were found over the various Amman sites (Najjar 1992: 910; Dornemann 1992: 92, 1993: 12) and are attributed to the same class of base and capital kerries.

Fortification System

Athens parts of limestone walls were uncovered at Tall al Unayir (Hert et al. 1994: 4); the clearest example of Ammanite fortification system was excavated at Tall Jawa where there has been 50 m wall exposed in one area including walls, towers and battlements (Davies 1994: 175, 178). The exterior face of the outer wall was plastered. The use of plaster to seal the outer face of the walls was evident also at two other sites in Amman (fig. 4.10) (Hert et al. 1994: 10; Borjas 1971: 37) and Khida (Najjar 1992: 416), and one site in Moab, namely Lahun (Homes-Frederick 1992: 194). The walls of Tall Jawa are of semi-hewn limestone boulders and are 4.5 m thick.

H. J. G. M. R.

$$d(u) = \frac{1}{2} \int_{\mathbb{R}^n} |u(x)|^2 dx = \frac{1}{2} \int_{\mathbb{R}^n} |u(x)|^2 dx = \frac{1}{2} \int_{\mathbb{R}^n} |u(x)|^2 dx = \frac{1}{2} \int_{\mathbb{R}^n} |u(x)|^2 dx \quad \text{Heuristics}$$

2. 1995. 100 pp.

$$H^1(\mathcal{O}_X) = H^1(\mathcal{O}_X(-1)) \oplus H^1(\mathcal{O}_X(1)) \oplus H^1(\mathcal{O}_X(2)) \oplus \dots \oplus H^1(\mathcal{O}_X(n-1)) \oplus H^1(\mathcal{O}_X(n))$$

$\mathcal{P} = \{p_1, p_2, \dots, p_n\}$ is a set of n points in the plane. A line l is said to be a *line of symmetry* of \mathcal{P} if the reflection of \mathcal{P} across l is \mathcal{P} itself. Let $S(\mathcal{P})$ be the set of all lines of symmetry of \mathcal{P} . Determine the maximum possible value of $|S(\mathcal{P})|$ for a set of n points in the plane.

1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 26

1. The first part of the document is a letter from the author to the editor, dated 19th March 1964. It is a short, informal letter, written in a friendly tone. The author is a young man, and the editor is a woman. The letter is about a book that the author has just read, and he is asking the editor to review it. The book is called "The Great Gatsby" and is by F. Scott Fitzgerald. The author is very impressed by the book and thinks it is one of the best he has ever read. He is asking the editor to let him know what she thinks of it. The letter is signed "John Smith" and is dated "19th March 1964".

11-10-1997

a) NaOH und Na_2CO_3 fällen Fe^{3+} als $\text{Fe}(\text{OH})_3$.
 b) H_2S fällen Fe^{3+} als FeS .
 c) H_2S fällen Fe^{3+} als $\text{Fe}(\text{OH})_3$.
 d) H_2S fällen Fe^{3+} als $\text{Fe}(\text{OH})_3$.
 e) H_2S fällen Fe^{3+} als $\text{Fe}(\text{OH})_3$.
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10. The χ^2 test is used to determine if the observed frequencies differ significantly from the expected frequencies. The test is based on the chi-square distribution, which is a probability distribution that is used to test the null hypothesis that the observed frequencies are equal to the expected frequencies. The test is used to determine if the observed frequencies are significantly different from the expected frequencies.

24 99 100 101 102

7. $M_{\text{eff}} = M_{\text{eff}}^{\text{eff}}(K_{\text{eff}})$ is the effective mass of the system $P_{\text{eff}}(t)$ for $t \geq 0$.

100

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$$1997 \quad f_0, f_{alt}, f_2, \dots, f_{n-1}, f_n, f_{n+1}, \dots, f_{n+m}, f_{n+m+1}, \dots, f_{n+m-1}, f_{n+m}$$

Y. H. H. H. H.

(1) f is a function on the path γ . For $t \in [0, 1]$, let $\gamma(t)$ denote the point on γ at time t . Then f is a function on the interval $[0, 1]$. We define f to be continuous if f is continuous as a function on $[0, 1]$.

$$\frac{1}{2} \left(\frac{1}{2} + \frac{1}{2} \right) = \frac{1}{2}$$
$$\left\{ \begin{array}{l} \text{if } \alpha \in \mathbb{R} \text{ then } \alpha \in \mathbb{R} \\ \text{if } \alpha \in \mathbb{C} \text{ then } \alpha \in \mathbb{C} \end{array} \right\} \quad \text{if } \alpha \in \mathbb{R} \text{ then } \alpha \in \mathbb{R} \quad \text{if } \alpha \in \mathbb{C} \text{ then } \alpha \in \mathbb{C} \quad \text{if } \alpha \in \mathbb{R} \text{ then } \alpha \in \mathbb{R} \quad \text{if } \alpha \in \mathbb{C} \text{ then } \alpha \in \mathbb{C}$$

Вспомогательная функция $\chi(x)$ удовлетворяет уравнению

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the following are the most important factors for the future:

North Y

17 The photo below captures the famous "Marilyn" treasure trove. As you may already know:

 $\lambda_1 = r_1 = 1$

The above was written at the request of the author during the time he was in the United States. It is a very interesting and valuable contribution to the history of the country from the foundation of the first colony to the present time. It is a very interesting and valuable contribution to the history of the country from the foundation of the first colony to the present time.

CHAPTER FIVE

DOMESTIC ARCHITECTURE IN IRON AGE AMMON: BUILDING MATERIALS, CONSTRUCTION TECHNIQUES AND ROOM ARRANGEMENT

P. M. M. DAVIES

With 10 plates and 10 figures

Introduction

During the last century, archaeologists working in Palestine have demonstrated that the courtyard type house (Shiloh 1970: 180 with its variants; Braemer 1982; Holladay 1992a: 308) was the standard plan of Iron Age Israel and Judah. While several excavations of this type have been found at Iron Age sites such as Be'er Sheva (see Qadeh-Meister 1980) and Neges (see Tel Aviv Museum and Fritz 1977: Fig. 2) and even in the Jordan valley (e.g. Tel es-Sa'idiya; Pritchard 1984: Fig. 179), it remains certain that this type of house plan was predominantly used in both rural settlements and walled towns of ancient Israel.

This fact has been discussed by scholars on the part of Shiloh (1970), Wright (1958), Herzog (1973: 10) and Holladay (1992) of the correlation of house plan with a particular ethnic group. More important issues for this work are the construction techniques and their correlation with the architectural plan, the location of specific domestic tasks, the range of domestic activities carried out within the confines of a house, and the degree to which rural houses and town houses were similar in terms of room arrangement and the functional organisation of space. Whether ethnicity can be correlated with a given set of architectural and functional variables is of lesser concern at present since the archaeological record in Transjordan is very new, being revealed only since a significant excavator of Moabite/Edomite sites (Hachnowski 1991). For other scholars, such as Shepard (1973) and Childe (before her), culture was represented by a complex of artifacts and features, most often remaining together (Childe 1929: vi). With this in mind, I will present a limited study of

construction techniques and building plans dating to Iron Age II that may loosely be called 'Ammonite'. As a result of this study, we may be able to show, on the one hand, which characteristics were ethnically specific and, on the other, the degree to which the Ammonites shared architectural traditions with their neighbors in Syria and Palestine.

The Survey Project

Due to poor weather conditions and rapid population growth, the excavations in what was the Ammonite kingdom during Iron Age II have been partially destroyed or not even started, and the only example of building materials construction techniques and building design is now preserved in the archaeological record of only a small number of sites. For this reason, the following survey will focus on sites located to the south and west of the Amman Valley, especially the Jabbal al-Lith, where the Late Bronze Age and Iron Age II preservation of domestic structures is more extensive than at the 'Amman Citadel, Sahab, Safiri and several other sites within the greater Amman area. Attention is drawn from the Iron Age I occupation at Sa'idiya, Tall al-Umayri and from the Late Age II excavations at Tall al-Faraj. Much more work is required to understand the evidence at the principal sites.

This paper is a revised version of a presentation at the Annual Meeting of the American Schools of Oriental Research, Nov. 20, 1994, in Chicago entitled "Architectural Traditions in Iron Age Amman".

A survey to determine the extent of Ammonite architectural traditions is being conducted by the author and a team of students at the American University of Beirut in Lebanon for typical Ammonite features, especially the double doorways. The site of Khirbat al-Hiri (east of Madaba) Whether cultural and political boundaries were

The remains of Ramat al-Mithar, at Tall al-Faraj, are located near the Jordan-Naples border. The site is located in a valley, and the remains of the city are located in the valley. The situation at Tall Safiri was less dramatic although the site was not yet excavated.

The Ammonite Survey is a project of the American University of Beirut, Lebanon, and is directed by the author. The project is a continuation of the work of the American University of Beirut, Lebanon, and is directed by the author. The project is a continuation of the work of the American University of Beirut, Lebanon, and is directed by the author.

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one-row walls, as at Tall al-'Umayri in Iron Age I Yonker; Herr Geraty; and LaBianca 1993: 220). The largest single stone used in a domestic structure (B600) at Tall Jawa was 1.08 m in length (C172). These stones can be described as semi-hewn since the inner surface was dressed or trimmed to form a vertical wall face.

Special mortars, linels. Dressed stones incorporated into special features within domestic buildings such as *Succas* (C133) at Tall Jawa House 800 (Daviau 1994: Fig. 15) (age 1 size from small (C23) to very large boulders (C23100) m). Similar size stones, also carefully dressed, were used in the core of cross walls that separated rooms from one another (C2333) at Waple in piers that functioned as doorframes (AB36a) at the end of walls where they formed the cores of doorways (Doorway B), and at the corner of buildings B600. This technique was very common throughout Palestine as at Tell el-Fel N. Building II, (Cristadoro 1988: Pl. 14; Gal 1993: 40–41), Hazor Area A, House 14a (Yadin *et al.* 1960: Pl. VII, VIII, and Area B Buildings 10000 and 9002) (Yadin *et al.* 1960: Pl. XIV I–XVII) and at Jordan at Ras al-Hanu W where rough hewn stone was laid dressed stone doorframes (McGovern 1987: 140). Limestone is the main type of rock used although a few examples at Tall Jawa (Building 700, Daviau in preparation, and at Balu' in Moab (Worthing 1995: Fig. 5) consist of limestone boulders incorporated into piers. In some cases, the walls were also spanning the doorways and supporting the upper storey walls.

Mud brick. The second most common building material used at Palestine and Transjordan was mud brick. Unfortunately, it constituted the superstructure of walls but the stone foundations (Reich 1997: 5). While structures with collapsed mud brick walls were present at Tall al-'Umayri (Yonker; Herr; Geraty; and LaBianca 1993: 20) the Iron I Yonker personal collection of an Iron Age II building walls at Tall Jawa appear to have been constructed entirely of stone on the ground floor. In two buildings (B600 and B600) the walls of second storey rooms were also set of stone. This was apparent in the rockfall that filled the lower storey rooms completely preserving the walls to a height of 2.00–3.00 meters. Evidence for

Fragments of mud brick (B2406) that collapsed into a casemate Room (R2) at Tall Jawa suggest that an outer casemate consisted of mud brick separating an

a mud brick superstructure has been found at a deep stratum late Iron Age I levels at Tell Jawa. Davies is preparing one in the Iron I cistern-storeroom at Tell al-Umayri (Clark 1974: 115). Evidence of collapsed mud brick walls in Iron II structures at Tell Jawa is very much seen only in Building 100² where the brick was most probably from second stone walls.

Private Structures

Styles of Wall Construction

Rounder and thick (Fig. 1). The most common style of wall construction for private and public buildings in all Ammanite sites in the Iron Age was rounder and thick. Such walls usually dry and consisted of various size rounders laid in place with small cobbles (0.06-0.25 m). No noticeable tool marks were observed suggesting the majority of the stones were chosen because of their irregular shape and suitability for wall construction. Weight 100-500 g were others were probably hammer dressed. Weight 100-500 g were others were probably hammer dressed. Weight 100-500 g were others were probably hammer dressed. Weight 100-500 g were others were probably hammer dressed. By contrast, the brick stones reported to have been used for their shape although they vary considerably in size and were of some cases extremely irregular.

Walls were usually 1 m thick or 2 m with a corner thickness. At intervals, larger stones would extend a single half width of the wall or would serve as capstones along the rows, as here. Thus, the irregular stones of various sizes had the result of making irregular courses, but a small number and large boulders with small boulders and oblique courses (Fig. 1). In view of this construction technique, the counting of courses fluctuates depending on the place along the wall where the count was made. Walls built of stones of the same size range are rarely seen in Iron Age sites although such a wall appears in Area D at Sahab (Bradley 1974: Pl. XX).

² Lumps of limestone included in the wall are from the Iron Age I Wall at Tell Jawa (see Davies 1974: 115). Davies is preparing one in the Iron I cistern-storeroom at Tell al-Umayri (Clark 1974: 115).

³ Braemer (1974: 115) gives the stone construction of the wall at Tel Esau. For some time during the Iron Age, as walls show clearly in zones (see).

The custom of building walls without mortar common at Tel Jawa is parallel to Tel Y. Unayir (Lawer 1969: 23; Gezer Field II Wall 100; Deyer-Landau and Wright 1976: 3; Dairan-Fishingham 1977: 6, Pl. II 1) and Busayra (Bennett 1963: 3). While the major building components at Duban¹² and Busayra were more like stacks of boulders (Deyer-Landau and Wright's description of Wall 1001 at Gezer, "built of dry-laid, roughly dressed field stones—some—times set in crude 'header-stretcher' fashion" 1970: 41), could certainly be applied to the majority of boulder-and-clink walls at Amratot. Since this is the earliest type produced at Hazor and Tel Sheva, it is not where one finds the composition of undressed boulder-and-clink walls—except in mud mortar (Yadin *et al.* 1958: 46).

Mud Mortar Foundation (Fig. 5.2). A second type of wall construction at Tel Jawa, Tel Y. Unayir, and Samra consisted of a single stone pilars set on four pillars and four supports in mud mortar structures. At Tel Jawa, low connecting walls supported these stone pillars that stood at least 1.50 m above the floor and measured 1.80–1.90 m in overall height.¹³ Albright (1943: 56), one of the first excavators to try to explain the function of the connecting walls, suggested them as "packing" to secure the pillars in place.

Stacked Boulder Pillars (Fig. 5.3). Large rectangular boulders stacked on pillars and joined together by low walls formed of large cobblestones were also found at Tel Jawa and Tel al-Mayyir. Such walls at Tel Jawa were in a variety of styles: stacked pillars with low connecting walls; stacked pillars with connecting walls standing tall; boulder-and-clink combination of these elements. The stacked pillars stood on average to a height of 1.25 m (for example in Wall 301) and were joined together at a distance of 0.50–0.75 m apart. The oldest of the walls that connected such boulder pillars

¹² While the walls at Duban were made of boulder-and-clink stones, the walls at Busayra were made of mud mortar. The walls at Tel Y. Unayir and Samra were made of mud mortar.

¹³ The walls at Tel Y. Unayir and Samra were made of mud mortar. The walls at Tel Jawa were made of boulder-and-clink stones. The walls at Tel al-Mayyir were made of boulder-and-clink stones. The walls at Tel Y. Unayir and Samra were made of mud mortar. The walls at Tel Jawa were made of boulder-and-clink stones. The walls at Tel al-Mayyir were made of boulder-and-clink stones.

The walls at Tel Y. Unayir and Samra were made of mud mortar. The walls at Tel Jawa were made of boulder-and-clink stones. The walls at Tel al-Mayyir were made of boulder-and-clink stones. The walls at Tel Y. Unayir and Samra were made of mud mortar. The walls at Tel Jawa were made of boulder-and-clink stones. The walls at Tel al-Mayyir were made of boulder-and-clink stones.

in Building 800 stood to the same height and along with the pillars were supported by large rectangular boulders and on their long sides for a total height of 1.5 m or more.¹³ In certain cases at Tall Jawa, the thickness of the pillars was 0.40 m on average with the boulder-and-chunk or cobblestone connecting walls measuring only about 0.30–0.40 meters. This pattern resulted in the construction of a series of recesses between the pillars. The ability to support an upper story was strengthened in the case of Wall 8014 where it was associated with a solid boulder-and-chunk wall (W8013) north of Doorway B located in the corner formed by these two walls (Davies 1994: 185–86).

The most outstanding example of a wall (W3027, fig. 5.3b) that featured a combination of flat stacked pillars and boulder-and-chunk connecting walls was recovered at Tall Jawa during the 1994 season. This is an interior wall in Building 300 that measured something like 30 m high and was at least 0.60 m thick. Wall 3027 was founded on bedrock and constituted the east wall of a room (R314) in the middle of the sprawling compound (fig. 6). Building 300 (Davies 1996: 10, Fig. 2).

Another type of interior wall was built of medium to large round boulders (0.10 H 0.60 m) positioned at intervals and joined together by equally thick cobblestone connecting walls (W3005, fig. 5.3c) from the base to the top of the wall. It is possible that the boulders supported short wooden pillars although no remains have been found in the archaeological record.¹⁴ The large number of examples of pillars with connecting walls at Tall Jawa is easily explained by Brachner's questions (1982: 2) concerning the function of these wall units and their construction sequence. It is more likely that the pillars were installed first since the boulder-and-chunk connecting walls were placed at Tall Jawa. He observed that in the case of a wall or wall segment of these pillars must have been built first and then followed by the function of the few or had long term use was to support the base of the pillars that were embedded

¹³ See the examples from Palestine illustrated by Brachner (1982: Fig. 56b, d).

¹⁴ One reason for this lack of organic material is that Tall Jawa was not burned when it fell. As H. Gonen (1994: 10) has noted, the archaeological record of the Iron Age II in the region is characterized by a lack of organic material. This is a common feature of the Iron Age II in the region.

or varying depths under the floor. Units standing full height had more than one probable function: to add strength to the wall, to form recesses between the pillars, and to support the eaves. They also supported the pillars themselves. The secondary use of these cornering units, especially the lower ones as benches or shelves does nothing to alter their principal function.

The use of wooden pillars standing full height on stone pillar bases can be assumed to be from Age I building at Tall al-Umayri (Clark 1961: 4) for the Age I house at Sabab (Biran 1974: Pl. XXXI). There from Age II, and in a late Iron Age II room R407 at Tall Jawa. Such bases were a common element of construction in Palestine from the Bronze Age (Abright 1938: Pl. 10) and continued to be used during the Iron Age (Biranovitz 1985: Fig. 5) although stone or brick pillars were the dominant type of ceiling support.

More than one style of wall construction was present in each of the Iron Age buildings recovered at Tall Jawa. The best example is Building 300 where a series of walls are perpendicular to the main wall of the house that system. These house walls were all boulder-and-chunk-and-chink. Wall 3001 that was part of storage magazines with low connecting walls. While additional interior walls were also boulder-and-chink, several walls were of stacked stones and chink connecting units. For the most part these different style walls joined one another although Wall 3003, constructed in 2-row boulder-and-chunk, continued as Wall 3024 which was formed of one continuous row of flat-topped boulders primarily supporting roofs along its length.

The construction of walls of various styles within one and the same building is also evident at Tall al-Umayri and at Sabab where boulder-and-chink was the dominant style but other types of walls were also in use. To a considerable extent this variety is seen in pillared houses throughout Palestine (Brainer 1982: 118, 119), for example at Hazor where pillars stood on a stone base (not level) (Yadin *et al.* 1955: 12) and at Tall al-Faraj. Nowhere both boulder-and-chink walls and stacked stones with quadrangular bases were

Walls possible to construct in a single wall were built following a design that was common in the Iron Age. Many walls were built to support a roof or a platform. The walls were built in a single row of boulders and chink. By the Iron Age pillars were supporting a single wall.

it use together. For example, in House H10 (Chamber 4484 Pl. 9). However, this particular wall site is proving problems returning to nature was that raised the main space into discrete rooms and was frequently associated with potholes that had cobble floors or potholes. Two such rooms have been found at Tel Jawa.

At the Annan Caid, boulder and chalk walls with some heavy buttresses were the only style used in the buildings on the Tarp Terrace. Herebert and Zavadine (1962) follow A. Tac excavations suggest that this may be due to Assyrian influence in the early phase of occupation. Herebert and Zavadine (1962) note that although this was clearly not the case during later Iron II at Tel Jayer where Neo-Assyrian influence was seen in the pottery from building 300, even though various wall styles were in use together.

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With this choice of location for the base of works, conditions on the site were more favourable and new have been achieved in the excavation of the 1st jaw. When six major structures were exposed. Only where walls were required to show the collapse of upper storeys, walls are shoring trenches visible. These were cut to give the final

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more space to work as they reconstructed the walls above earlier wall lines. In other instances, walls were founded on the underlying debris at the new floor level, without benefit of foundation trenches.

Floor Surfaces

Several different categories of floor surfaces including beaten earth, cement and lime plaster, bedrock, cobblestones, boulders, and flagstone have been identified in Arikara houses. The character of surface may reflect both the status of the dwelling and functional necessity. Out of 55 surfaces uncovered or identified in the domestic buildings at Tail Jawa, 7 percent were beaten earth, 55 percent were of lime and plaster, 1 percent consisted of bedrock with patches of lime plaster, 31 percent were paved with boulders, the castor oil seed system, and 6 percent were paved with flagstones.

Beaten earth Beaten earth floors were probably the most common and have been identified in all rooms with ovens or hearths as well as in rooms with a high percentage of storage jars in comparison. For the most part, these rooms appear to have been roofed especially in view of their size (3.00 m span or less), the presence of stumps, and their contents.²² The presence of an oven is usually a sign that a room was roofed. Daviau 1943: 451, especially in view of the only rains with no crop on on the central Jornada plateau; storms produced 1.00 m of snow in 1942; 50 days of rain in 1946.

Plaster and lime plaster Certain floor surfaces associated with ovens or hearths, such as Room 102 at Tail Jawa, have been identified as plaster surfaces such as Room 102 at Tail Jawa. Arikara Village VIIA where a collapsed ceiling was found. In spite of this, a large number of

An example of this construction technique was seen in Room 102 at Tail Jawa where Wall 10.2 sat on a contemporary surface. A3.26 Daviau, in preparation.

A long history of interpretation has suggested that unpaved rooms with beaten earth floors were open courts. This model, popularized by Berbe 1968 has not been widely accepted. That ethnohistorians can depict Iron Age houses with an unroofed room while referring to ethnographic examples of houses that are completely roofed (Dever 1962: 206).

Another plaster ceiling found in Building 306 at Tail Jawa collapsed into Room 301. This was a large room, 10.00 m by 10.00 m, with a high ceiling. It was a large room, 10.00 m by 10.00 m, with a high ceiling. It was a large room, 10.00 m by 10.00 m, with a high ceiling.

storey rooms, especially frequent in Building 300. The flagstones were installed above a debris layer or a packed earth coating. These flagstone flags measured ca. 0.30 × 0.40 m and 0.10 m thick with the largest being 0.40 × 0.60 m × 10–15 meters. Flagstones of different regular shape were used in the Iron Age I buildings at Tall al-Umayri (Clark 1996: 241) and at Sahab in Area B (Ibrahim 1974 Pl. XV) and in Area D (Ibrahim 1974 Pls. XVIII, XX). In most cases, rooms with paved floors were built so that the flagstones and other zones were embedded in an earthen debris layer or surface (Rah).

Function: Interprovincial

In each Iron Age domestic structure a variety of styles of wall construction and floor surfacing was found. Attempts to correlate these changes with one another and lateration in patterns of distribution, a part of the building and technology is only now underway. Common to all is the use of wall construction, as in the case of the wall of a tiled tower in others known from western Palestine. While the degree of urbanization in Amorite and Israel may have been comparable during Iron Age II, the actual conditions established west of the Jordan in Iron I may have been considerably different. This is especially true of the Palestinian four-room house and its variants, whose development as a typical house has been the continuing topic for interpretation (Lipschitz and Holladay 1992) and the uncertainty of individual rooms (Holladay 1992: 107).

The transition from houses built with solid interior walls to buildings that make use of wooden posts to structure the rooms, separating one room from another appears to have occurred during the Late Bronze Age.²⁰ This change is seen most clearly in the construction sequence of Building 1 at Tel Barasi, Stratum VIII–VII, where plaster bases marked the position of wooden posts for supported interprovincial rooms in both Stratum VII and VII (Kelm and Mazar 1982: 9; Kelm and Mazar 1991 Figs. 8, 10). In the case of Tel Barasi and several Mesopotamian examples cited by Holladay (1992: Fig. 9), the plan of rooms is parallel to the central hall.

²⁰ See the discussion in Holladay (1992: Fig. 9). See also Holladay shows a staircase in Rooms 1a and 1b of the “tablet Building” at Tall Haddi when the rooms are reported to precede a central hall (Lipschitz).

Most problematic has been the functional interpretation of rooms associated with painted walls. The use of such painted or plastered standing stone monoliths as the long wall of a narrow stone-paved room became a prominent feature in Iron Age I houses, both in rural and urban areas, and in certain walled towns (Holladay 1997a: 338) of western Palestine. The interpretation of Holladay (1997b: 14) of the low connecting walls between the pillars as markers, and of the paved floors as stair treads or ramps, is becoming the norm for understanding Iron Age houses. Holladay (1997a: 339) uses ethnographic parallels to support his interpretation of architectural components related together. However, this would well contend that this is clearly not the only way of interpreting the ethnographic material or the archaeological record.

Ground Floor Rooms

Freedom from full access In Binding 300, the central jawling six rooms (R 302, R 303, R 305, R 306+R 320) were situated between two walls formed of stacked boulders, laid in two courses (R 305, R 306) where there were lower limestone partition walls or connecting walls between the pillars. Because these rooms varied in size shape and function, a single general conclusion could be drawn: each style of wall construction, a particular surface treatment, and a given function. In addition, the location of these painted rooms varied from one room to another. For example, a pillared room (R 302) ran parallel to the short end of the central jawling Binding 300 floor (Fig. 3.2, Fig. 3.5), while the short end of Room 305 was somewhat different in that it was parallel to the long wall of Room 300. At the same time, Room 31 was on along the side of Binding 300 but did not connect to any other rooms on all sides.

To understand this variability, the value of such a wall must first be considered in purely architectural grounds and only later evaluated in terms of room function. In the case of Binding 300, the painted walls were made of well-laid rows of limestone and chert field stones in a herringbone construction. With one exception (W 3005), walls formed of stacked boulders ran perpendicular, preventing secondary support for ceiling beams and separating one room from another. The advantage of such walls was in the windows' location: the pillars that allowed air and light to pass from one room to another. The disadvantage was the requirement to insulate against

that connected the south Wall 3033 to the stacked pillars in the north wall. These rows of cobbles were found in a state of collapse showing the collapse had been preceded by an event. Room 315 was divided into three equal parts, each ca. 0.80 m wide. This arrangement, and the cobbles placed there (Fig. 3), suggests several measures taken to protect the room from intruders by blocking off entry points and possibly the presence of the windows in its north wall meant that a certain amount of light was available at night between Rooms 315 and R300, even if the north side of the pilared wall. In addition, it could enter Room 315 from an even position on either side of the wall. In a sense, entering the room from either side of the wall was a primary concern and for the retention of food, the house was not a storeroom. Room 315 probably served as a kitchen, where the sacks of food stuffs, although in its latest use it had a number of storage jars, were in the room along with basalt millstones, four iron points and an obidian arrowhead (LJ 1500).

Pilared Room 316 was a narrow side room off of wall corner 30. This small, thin, 5 m room with its beaten earth floor contained at least six ceramic vessels and 12 pieces of bone, a few worked. Room 317 had a hearth, a food processing area and a storage shelf.

A small side room, Room 318 in Building 300 was a small area containing an oven, a storage area and a pilared wall. It was a small room used for domestic activities adjacent to a cooking area. Between the pillars of Wall 8015 were two doorways (C 1) and one doorway (C 2). Over C 2 was a small fluted Archaic bowl on the floor pavement of the room (LJ 1501). The stone floor in Room 318 had two openings, two open, one stepped, one stone and two closed, providing an indication of food processing activities in the room. In preparation of vessels, figures and toys.

Room 319. Although in size Room 319 could have been seen as a stable for small animals, its location and contents do not support this interpretation.

In Middle and Late Bronze Age houses (Davies 1991: 45) a typical storeroom for food storage and for the storage of tools and ceramic vessels was a small, narrow room that tended to be dark and cool. This pattern was seen in Room 313 of Building 300 and in Rooms 802 and 807 of Building 800. There was no doubt concerning the function of these rooms since each one was filled with broken vessels, loom weights, food processing tools, and lamps. As

an example Room 802 contained a minimum of 27 ceramic vessels, 50 artefacts, and a cooking area.

Cooking areas The location of cooking areas appeared to take into account the position of walls and the direction of drafts. The result of these considerations is that among 20 analysed rooms alone found at Tall Jawa 38 percent were built into against a wall, 32 percent were adjacent to a doorway, and 45 percent were in a corner or protected by a saddle partition set into the floor on its long edge. Of these over 50 percent were located in a room used almost exclusively for storage while the remainder were in multi-purpose workrooms.

Workrooms Within Iron Age II houses large numbers of other rooms (R 803) presumably originally filled with wine, oil and water were located in the corners of large rooms R 802, R 803 that also served as food processing and cooking areas. These workrooms where food was processed, prepared and cooked were clearly delineated by the large chunks such as stone jars, kettles, bowls, cooking pots, tinners and pithos, mortars and pestles, large bowls, large stones of various sizes, clay moulds, stone and metal blades, animal bones, even a fish. As a consequence these rooms were multi-functional and provided the areas of various household crafts, especially those of textile production. As a result spaces were of a variety of size and shape than might be expected, ranging from small rooms R 805, 2.50 × 4.50 m to extra-large rooms R 804 4.85 × 8.00 m. Of the rooms in Building 300 that contained vessels 35 percent were multi-purpose work areas. In Buildings 800 and 900 Stratum VII a similar ratio was seen with only 20 percent of rooms serving as storage rooms, whereas workrooms.

Roofed Space

Brachner's careful analysis (1972: 14–5) of the excavated completely roofed buildings in Iron Age Palestine is supported by ethnographic analogy and is now being recognized by other scholars working with domestic architecture (Holladay 1993: 103). Variation in roof height and the use of clay-tile construction was suggested by both Brachner (1972: 39) and Pritchard (1985: 30) although archaeological evidence is sparse. At Tall Jawa, the average width of rooms is 1.96–2.46 m wide with the largest room having a width of 4.85 m (R 804). All of the rooms exposed in domestic structures were narrow enough to be roofed, even Centra Hill 801

tion phases, the basic plan was not altered significantly. Most rooms seem to have been only a single story except for workrooms adjoining the casemate wall (R301, 302) and two rooms on the east side (R313, R314) which appeared to be basement rooms. Along the east side of the casemate were three long rooms that ran parallel to the wall of a passageway (R303) and perpendicular to the casemate wall. Three other rooms also built up against the defense system were located on the east.

Both broad rooms 302 and 303 had one long pillar with 11 sections. Room 302 had a short pillared wall as well. The access between rooms was also variable. Room 303 had two entrances into Room 305. Room 302, however, had four entrances: D into Room 303; F into Room 320; E into the Cistern Area; and C into Room 301. No clear pattern is seen at the site which might comprise this situation. Indeed, building 300 may be more than one individual house although the evidence remains equivocal.

Building 300. The main complex plan was seen in Building 300 where Central Hall (R301) was flanked by stairs on the north and northwest of this hall the walls were built of dark chalk (C). To the east and southwest the walls were formed of stacked boundary pilasters and in the south was a wall of monolithic stone pillars disjunct above. On both the east and west sides there was a single staircase leading to an upper story. West Staircase (D) was on the west, two parallel horizontal chalk walls for service as the main walls of these rooms (301 and 302) while East Staircase (F) had walls of cross-arched support walls which only secondarily formed the ends of long narrow rooms. The closest parallel for this scheme is found at Tall al-'Umayri in Building C where a staircase led down to a basement. Herr's personal conclusions.

The rooms around Central Hall (R301) varied in size and proportion with two rectangular rooms (R302 and R303) and two square rooms (R306, R307). This does not follow the pattern seen at 'Amman Citadel where the building partially exposed in Field A consisted of

In the latest phase, Stratum VIII, certain rooms went out of use and were filled with soil and then carved out of the soil. (Yadin, *op. cit.*)

A comparable staircase at Hazor Building 1000. A stair was built perpendicular to the outer wall and the staircase support wall. However, its south side was formed by a wall of the same type by a different construction as part of an ordinary room. Yadin *et al.* 1960: Pl. CCIV.

a central court (Cour 101) with rectangular rooms parallel to the long walls of the court. The excavators Humbert and Zayadine (1992: 208–50) see here the same Assyrian influence that Bennett recognized at Basayra (1963: 40–1). No comparable building among the well-known plans has been identified to date by Lucal-Uribe (1991: 140–141). This may be an indication of the chronological period of construction of the site; these houses are comparable to that of a capital city.

Conclusions

The observations seem appropriate at this stage in the study of Iron Age sites. First, Assyrian architects did indeed employ the same building techniques as at other Palestinian and Syrian sites and shared certain construction techniques. Second, the use to which they put these techniques shows important differences and a tradition of employing several techniques in one and the same building. Finally, a standard building plan is common in Palestine during the Iron Age, namely a small, low four-room houses of various sizes. The same plan is to be present and these only in Israel. A new Assyrian concept of architecture structures that architecture is different from domestic structures during the same period. Over time, new building plans appeared but these also are now well known to be a product of Iron Age buildings. Hopefully, future excavations will expose a larger number of domestic buildings in order to identify the range of building plans in use and the precise relationship of such houses to other buildings within a different town plan.

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This research was funded by a grant from the Social Sciences and Humanities Research Council of Canada and by a Short-Term Grant from Wilfrid Laurier University.

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CHAPTER SIX

BURIAL CUSTOMS AND PRACTICES IN ANCIENT AMMON

KHAR YASSINE

Amman, Jordan

Introduction

Even though the number of tombs discovered in Jordan during the Iron Age period is still relatively small, it is possible to draw many conclusions about the available data on different types of burial customs and burial practices in ancient Ammon. Burial customs vary according to the level of technology at a particular time. Careful study of burial practices in a certain region may throw light on social hierarchy and religious beliefs since burial customs tend to be more conservative and less susceptible to outside influences and changing fashions than other customs of ancient people. Unless there are repeated and documented cases of certain customs from relative burial customs to demonstrate evolutionary gaps. If it is richly supported by its own merits — the highest — the many evidence available, the archaeologist can hope to identify the different burial practices as well as ethnic, social, and religious distinctions.

From periods or areas from which little or no written material has survived, burial practices, religious beliefs, and social relations can be summarized from material remains. Namely, four types of their physical representations. These have to be studied and analyzed. A specific feature might indicate some specific traits, for example, sex, height, burial site, the area beyond them, which may have reflected on social behavior. The position and orientation of the body might indicate social or religious distinction. Moreover, for example, are buried facing Mecca. Burial of a death and sacrifice can be inferred from the way the bodies are arranged. Gifts placed in the tombs and other burial customs observed by the excavators may indicate social differentiation as can the lavishness of different tombs, such as the pyramidal one mastaba and the pit grave.

Tomb Types

In the past decade, few Iron Age tombs have been discovered either accidentally or by well-organized excavations in Jordan. Their types range from natural or artificial caves to shaft tombs dug in rock and in soft earth. Other types of tombs include those built of mud brick, stone, tombs, and pit graves. From the physical feature of caves and graves one can notice the different tomb types people of the Iron Age were using.

1. *Natural Caves*. Natural caves were the most common features used for burials during the Iron Age, especially in the mountain area with many natural caves (e.g. Marakeh and A-Hirag in the Nebo area, Khabat Mukhayyat, Saké 1960). However, few have yet been found in the 'Amman area.

Natuf Iron I Cave (Tomb). This is a large natural cave with entrance facing west. The entrance is narrow and at one time it had been closed by corbeling stones that formed a chimney-like opening at the top. This opening was sealed by a round, small slab of stone. The general shape of the cave (Ibrahim 1972 pl. VI, fig. 1) is irregular but tends to be rounded in the southern part. It measures about 14 m long and 5-50 m wide. The cave becomes narrower in the middle and northern segments. The height ranges from 2.0-0.5 meters. There are a number of benches along the side of the cave. These seem, however, to be part of the floor rather than they were made on the excavation. The cave contained eight large burial jars with the mouths removed. Each burial consisted of two jars connected at the neck. The burials were placed in the southern and eastern parts of the cave. Various objects made of pottery, bronze and iron were found in association with the skeletons (Ibrahim 1972). A few caves of this type were found in Samah and used for burial purposes.

2. *Artificial Caves*. The people of the Iron Age in Jordan, besides using natural caves to bury their dead, used artificial caves dug in the soft, moist, or rocky area not far from their towns or settlements. It is possible that these caves were a natural cave development from the most common type of the tomb in the Bronze Age, that is the shaft tomb where the body lay in dug in soft mudstone. Examples of this type were discovered in several places in the 'Amman area.

Samah. A large rock-cut cavern, approximately 7 × 1 m, with a

entrance at the northwestern corner by a flight of ten steps, all which were constructed and protected for some distance into the cave itself. The whole of the west and part of the east wall of the stairway was built and roofed with four large slabs. The entrance was sealed with a ring of rough stone. The tomb itself was undisturbed until it was opened during excavation. Inside the tomb chamber, no attempt was made to dress the walls. Indeed, it would not have been needed as the rock here is composed of layers of crumbly, shaly limestone, with occasional harder layers of crystalline limestone of which formed the roof of the cavern. The eastern corner of the chamber was largely built up to support the roof. The most curious feature of the tomb was a chimney-like construction at the middle of the southwest side that presumably reached up to the original air intake orifice. Very fine dust had penetrated through the opening and covered the floor of the chamber to a considerable depth, preserving some of the possessions of the deceased. In the southeast of the chamber, bones and pottery were lying uncovered on the rock floor.

There was a rock bench, some 30 cm high along the southwest side of the main chamber. The floor sloped fairly steeply toward the center of the room and then levelled out. As a result, many of the pots and skulls had rolled off the bench onto the floor. The tomb dates to the Iron II period (Harding 1948: 92-102).

Dajani Tomb C, another tomb similar to the one described above. The tomb is a large rock-cut cave approximately 8.20 m long, 4.50 m wide and 1.50 m high. Entrance to the tomb was from the west side by a flight of several steps hewn in the rock. The walls are roughly dressed and no attempts were made to dress the rock surfaces. The construction of the tomb, which it shares with Sahab Tomb B, is the chimney-like construction at the southeast corner. Reaching up to ground level along the south side of the cave, there was a rock-cut bench some 50 cm high. The rooms that had entered the tomb stepped fairly steeply toward the center of the cave and then levelled off with the result that many of the pots and skulls had rolled from the bench to the floor (Dajani Tomb C).

Another bench on the northern side of the cave was about 1.50 m wide but only 20 cm high. There is no indication that burial remains were ever deposited on it. This tomb is similar to other discovered tombs of the same period. Examples include: 'Amman Adoni Nur Tomb (Harding 1943); Jabal al-Jawash-Sharap (Dajani Tomb C); Sahab Tomb B

and C (Dajani 1968; Amman D B C Harding 14; Amman I in the Roman Theater Harding 1971); and Megalithic (Dornemann 1970: 10-12). Tombs of a similar type have also been discovered for example in Irbid A Band C (Dajani 1968a; Macaluso Piccirilli 1977: 100-101; Duhur J 12-13; J 14; Lushington 1972: 69). Throughout the Iron Age, communal earth burials was customary. The other communal burial was the shaft tomb.

3. *Shaft Tombs.* Shaft tombs were also either dug in soft rock or in the earth. A number of these were found in the area of Amman, for example, within the grounds of the Ragdan Royal Palace in 'Amman (Yassine 1975, 1988a: 33-46), while many were found outside the area.

Ragdan Royal Palace. In April 1968 a Jordanian Army while leveling the grounds of the Royal Palaces in 'Amman (Ragdan Royal Palace) found what appeared to be ancient tombs. The find proved to be a settlement dating from the Roman to the Islamic periods. A tomb containing a number of cylindrical coffins was found below one of the complexes. The tomb was earth-like in shape. Its floor was 90 cm in diameter while it was 11 m deep, 5.6 m long, and 4.5 m wide. The entrance, located at the center of the tomb, was blocked with stones. A path led to the tomb. A Khufi, one of Amman's districts (Yassine 1988b: 2) five cylindrical coffins were found inside the tomb. Four were placed in a row to each other, while the fifth was perpendicular to them. All were in bad to very poor condition. Four were cylindrical, ranging between 10 cm in diameter at the bottom and 10 cm at the top. The length ranged 1.75 m to 1.9 m. One coffin, because of its condition, was discarded (Yassine 1988a: 33-41; figs. 2-3).

Kulda Tomb 1. This tomb is located some 300 m southwest of Kulda Fortress A (Yassine 1988b: fig. 1). It was dug into the local stone as a shaft grave with a stepped shaft and entrance at the south side. The tomb measures 60 cm in diameter and 2.00 m in height. The assemblage recovered from the tomb comprised some 17 ceramic pieces. This corpus includes one jug, one small jar, one large three-lobed carrot-shaped bottles or amphora, one bowl, and one Ayne ware ekphos (Yassine 1988b: fig. 1-5). This tomb was dated to the fifth century B.C.

4. *Built up Type.* This type of tomb is built of mud brick. It was found at Tall as-Sa'idivya. It probably dates to the Late Bronze Age

Pritchard 1980. Another tomb of this type was found at Tall al-Khalayfi (Glueck 1940: 2-18). None have yet been found in the Amman area.

The Pit Grave Type (Pit Burial). This type of tomb was a pit dug in the ground. No attempt was made to line it with bricks or stones. In the case where stones were used they were used only on one side of the grave. This type of tomb was found at Tall as-Safidiyya (Pritchard 1980).

The use of a particular type of tomb must follow certain social and/or religious practices. The different tomb types were used by different ethnic groups. Nabatean tombs are a few examples of this. The continuity or discontinuity of tomb type, plan, or shape can be important in determining whether or not population changes occurred.

The body, dressed or wrapped in cloth or matting, was laid on the bottom of the grave pit and covered with earth. Similar graves were found at Mistraq (Glueck, Nasir, and Bishara 1961) and at Amman, as well as at Akkay, Hazor, Akkush, and Tall as-Hasa (Stern 1962: 80).

Pit of Man's Grave. Located in LC and extended to the east side of LC, it showed a shallow grave dug into the earth. The pit is covered with hard brown mud-brick soil material. The grave pit also consisted of earth mixed with ash, debris mixed with pottery sherds and animal bones. There were no buildings erected along the side of the grave (Yassine 1984, fig. 19: 1).

The burial had a fairly complete skeleton, although the bones were very fragile. The dead person was aged 25-30 in an excellent sitting position. The head was placed on the east side up. The skeleton was buried with its legs crossed and the arms outstretched. It measures 70 cm, and is believed to be that of a young male adult between 20-30 years old. The mandible, teeth, and petrous are all present. Seven arrowheads and spear points were among the mortuary offerings. The assumption is that the dead person was a warrior. There was evidence of a head injury, observed at the right corpus of the mandible, that had healed.

This burial was accompanied by a rich assortment of grave goods. Seven arrowheads (Nos. 64-71; Yassine 1984: 15, fig. 52: 64) were found at the right side of the right arm, stuck together as if inserted into a quiver, now completely decomposed. They were cast into

late blades with low rounded midrib, rounded in section, tapering to a point where wood remains still exist. Separate stems do not appear on any of the seven arrowheads. Yassine 1984 fig. 59-60. The stem is an integral part of the blade rather than a separate piece. A small glass was found broken. After removing the skeleton from a glass bottle (No. 60; Yassine 1984 fig. 49-60), broken into seven fragments, was found adjacent to the right side of the body underneath the right arm. A bronze fibula No. 155, Yassine 1984 fig. 51-55, a bow-shaped bow with gourd rings at each end was found on the left shoulder. Four spearheads were positioned on the right leg above the knee. Yassine 1984 figs. 53-55-60. The cravat which contained the spears must have been affixed to a waist belt. The four spearheads are of iron cast and rat-tanged. Thus the body was fully dressed and joined with its military equipment.

An iron knife had been reported among the grave goods. It was actually found in a remote spot, not at all near the body. It could very well have been deposited somewhere else. The blade is slightly curved on both sides. The tang was mostly lost.

A bronze *hsh-lx* piece was considered among the military objects. Yassine 1984 fig. 61-64. It was possibly part of a power box or some rough *h* mouth opening. The box consisted of two concentric circles and a middle dot. The body was incised with a criss-cross lines, then a criss-crossed line. Three scarabaeids No. 5, 185-186, Yassine 1984 figs. 58, 185-86 were found, all of ancient date. No. 5 was inscribed with two hieroglyphic signs and a scarab with outstretched wings. Scaraboid No. 186 was inscribed with two signs the *h*-form and the *sh*-sign. One scaraboid was incised with traces of an inscription. A stamp seal is of white limestone. It is with rounded top and perforated for a string. The base shows criss-cross lines. No. 182 Yassine 1984 fig. 57-82). A perforated shell was also found. The pit-grave type is the simplest form of burial. It is therefore not surprising that this type is found throughout the neighbouring countries in the Prehistoric Period. The form of the grave is not important in this type of burial. At Tell el-Mezar Graves 65-71, 74-76, 78, 82, 83, 25, 27, 30, 48, 50, 63A, 64, 67-75, 78-82, and 84 are of this type (Yassine 1984).

C. Grave lined with stone on one to five sides. After a pit was dug its northern side was lined with one course of stones. The body was laid on the earth at the bottom of a grave and covered with earth. Possibly a wooden cover was placed at the top of the line of stones.

We were assured that the wood has since decayed and disintegrated, thereby leaving no noticeable traces.

Tall al-Mazar Grave 26 In the middle of the north balk of square D-6, Grave 26 was dug deep into the burial mound 110 cm \times 40 cm below the surface of the ground. A stone wall was built at the north and west sides of the grave. Since the soil at this site is very loose the stone wall was probably built to keep the grave from collapsing. The skeleton was in fairly good condition. The bones, nevertheless, were fragile. The uncovering and exposing of the bones was rather difficult and they did not hold up for drawing or photographing. The skeleton was laid in a recumbent position, head to the east but looking south. The arms were bent up and the fingers were interlocked on top of the chest. The feet were flexed. There was a small burial Pottery bowl was found on top of the legs. Graves of this type at Tall al-Mazar are 12, 13, 14, 15 and 16. Yashin 1960: 30 fig. 10, 11.

Pits Lined with Brick The grave was first dug in the ground and then lined with a single row of bricks, 40 cm high, laid side by side. The body was laid within the space and covered with bricks. Tall al-Mazar Graves 1-44 are of this type at Tall al-Mazar and this type.

Tall al-Mazar Grave 17 Cut in the middle of square C-6, 90 cm below the surface and partially into a cistern lined with brick and a masonry wall. The grave was lined with masonry bricks on the left side. The body lay on east-west oriented and head to the east. The body is lying on its right side and the head raised slightly and resting on its right back. The body looked down slightly. The arms were bent over the chest. The body is 30 cm long and the size of the bones are so large and robust that when the excavator reached the level of the bones he thought there was something wrong. An internal Pottery sphere was 12 cm in diameter, height 12 cm, diameter of the patella 21 mm, epiphyseal breadth 31 mm, radius 31 millimeter.

The skeleton was in good condition. One interesting and surprising observation was that a bronze rod was found penetrating the skull from the back of the neck through the front of the mouth. It is not clear whether the penetration was through the mouth or from the back, since the rod tip was broken and not an antiquary.

The rod's location apparently indicates the cause of death. The placement of the body on the left side and not in a dorsal

position. To make the many stretched bodies in the cemetery might have been necessary due to the protruding rod. A physical anthropologist study indicates the burial is of an adult. From the bronze fibula we would expect the body had been fully dressed at burial. Other associated goods were a scarab and a silver finger ring (Yassine 1984: 26-27).

Coffin

A few coffins of different types, datable to the Iron II period, were found in the Amman area. The types are Ammanian Coffins, Jar Burials, and Larnax Burials.

1. *Anthropoid Coffin*. The burial mentioned above was an Ammanian. The coffin was a wheel-shaped anthropoid coffin. It was jar-like in shape. Two anthropoid coffins in jar shape were found inside the tomb. They were reddish in color and made of baked clay. Crushed pieces of pottery were used as grit. The coffins had four handles on each side. The handles were evidently used in transporting the coffin (Yassine 1975: 1984a: figs. 2, 3, 4, 5, 6, pl. I, II, III, IV). The coffins depicted in fig. 3, pl. II had six handles at the back, arranged in two rows. These seem to have served as legs to elevate the coffin when it was laid horizontally. A lid was put out at the back where the head of the corpse would rest. There were four pairs of matching lag handles on the lid and on the body of the coffin, evidently meant to fasten the two parts together. There were portraits of the deceased on the exterior of these lids. These portrayals show pointed noses, small and elongated eyes, and eyebrows arranged in such a way as to appear with the outline of the border of the face. The ears were prominent, the lips small and straight, and the beards of pronounced length.

Two coffins had arms placed on their sides. The other two coffins (Yassine 1975: 1984a: figs. 5, 6, pl. III, III) displayed no features on their lids and were arms present. More than one skeleton occupied each coffin. Some coffins contained two, while others held three. The coffin depicted in fig. 1 had a curious looking design. I have assumed here to be merely potter marks. The discovery of anthropoid coffins in the vicinity of Amman naturally leads to a wider study of this type of coffin in nearby areas. Very few sites have shown this type of practice in Palestine and Jordan. However, from

the evidence we presently have, we can attempt to categorize them as follows: 1) cylindrical coffins with lids modeled in high relief with raised arms on the lid; 2) cylindrical coffins with lids modeled in high relief and a yss modeled at the side of the body; 3) oval cylindrical coffin, and 4) elongated box with rounded ends with lid covering the whole box (Yassine 1984: 32).

2. *Jar burial*. In this type of burial containers, the skeleton was placed in a jar or a wooden jar, put in an earth pit and covered with earth or wood.

Tall al-Mazar Grave 47. In Square E-A, a large storage jar was found on the floor of the surface. The jar had a lid which was made of a red clay on its side. Inside was a disarticulated skeleton of a young child, one or two years. Within the south side of the jar there was a line of stones separating this jar burial and Grave 60. The skeleton was lying on its back. At the center of the lower limbs indicates that the child's body was narrower as was with the head to the west. Two different heads are going together, one is slightly lower than the other. This is the only instance where a child was found buried in a jar container. It is believed that if the child is somewhat older (one or two years) it should be buried within the jar coffin. The height of the jar is about 1.5 m. This might be one of the uses of the use of the clay container (Yassine 1984: fig. 32-2). This practice seemed to have occurred for adults as well at Sahab, though the excavation report is not clear. There is, nevertheless, enough evidence to support such a practice (Ibrahim 1972: 31).

3. *Larnax burial*. This burial consists of a bath-tub-like clay box with one side rounded and the other straight. The bottom of the box is flat. The sides are rounded on the straight end and one side rounded end are decorated with a rope motif below the rim. The body was buried in the larnax with its head at the square end. The larnax was found in an earth pit 6 m below the ground surface. The clay coffin was set upright and provided with a possible wooden cover (Grave 5 at Tall al-Mazar is of this type (Yassine 1984: 32)).

Tall al-Mazar Grave 23. This grave located in the lower corner of D-5, is a child larnax type. In this case a pit was dug for an oval larnax. The coffin was placed right side up and the body positioned in it. The larnax had one rounded and one straight end and it was possibly originally provided with a wooden cover, since impressions were traced in the upper section, adjacent to the edge of the larnax. The larnax measures 98 cm long 16 cm wide and 15 cm deep. The thickness of the wall of the coffin is 4 centimeters. It has two handles

at the straight end and one at the rounded one with a robe motif below the rim. This strip of rope contained a thin layer of paper just as this was crossing inside its handles (Yassine 1984: 91 figs. 2-24).

A clay box of this type was also found in the Adom-Nur tomb in Amman (Hartung 1983). Others have been found at Tell al-Qataf, near Bayisan; at Tall Duthan; Tall al-Farah; and one from Balata Shechem (Stern 1980: 91). There is one also reported from Bahrain (Gray 1956). A number of this type of burial container were also found lying above the Neo-Babylonian level floors in Uruk. The remains of these ear-clay coffins seem to be as reported by Woolley (1962: 55). The body was placed on its right side in a crouched position with its head to the west. From the analysis of the graves from the Neo-Babylonian period, the original shape of the coffin is difficult to have been reconstructed. In the size of the coffin, it would not have been big enough for an adult (Yassine 1984: 59).

These differences in burial types in the western cemetery do not point to different cultural groups. As said earlier, the excavations of the Hittite graves reveals that, despite the differences in the burials, they can be divided into several classes, which may or may not have any similarities in practices. The common element in these burials is that the body was placed in a rectangular grave dug in the ground after being placed either inside two halves of the jar, in a pottery coffin or in a compartment of stone or brick.

Most of the burials excavated in the Tell al-Mazar cemetery were of the type B plan, in which the body was placed in a rectangular grave dug in the ground. The graves have been covered with earth. The graves for the most part were evenly and fairly distributed. Nevertheless, there were exceptions. Some graves were much closer to each other than usual, slightly superimposed on another grave, or overlapping one another. These exceptions, and the evidence from the double burials, two persons found in the same large jar (see discussion and see Gray 2003: 28, 30, 34, and 35). Graves were dug from the surface, not all by any means, but the same horizontal plane to a depth where a good layer of soil was found. The grave layers, from a meter to slightly over one meter (Yassine 1984: fig. 1).

The burial types discussed above provide information in addition to the known types discovered at Siro-Pol and the sites of this region. These previously identified as first, second, and type A second.

$$f_{\text{SIS}}^{\text{th}} = f_{\text{SIS}}^{\text{ex}} - f_{\text{SIS}}^{\text{th}}(t_{\text{SIS}}^{\text{th}})$$

cup or bowl, some decorated in primary colors. Bowls of various sizes, some decorated, others plain, are as low ornamental bowls with designs to reflect

2. The weapons and numbers of arrowheads uncovered in graves. The favorite weapon was apparently the bow and arrow. Another popular one was the spear and sword.

3. Seals were found made of different kinds of precious stones. Various series of beaming animals and religious symbols are engraved on the seals. Two inscribed seals have been found.

4. Among the many personal ornaments found in the graves are rings, earrings, bracelets, pendants, and necklaces.

5. Animal bones were also found. One may possibly think that these people believed that the dead should be supplied with food for their necessities for the life hereafter.

6. Some of the human figurines were among the bones, but maybe some of the pottery vessels had some ritual purpose as libation.

7. Various objects used in the preparation of different drugs were found in the graves. Obviously, it was important according to the religious beliefs of these people that these objects should accompany the dead.

8. Among objects for personal care and for sewing found in the graves are different bronze weapons and needles (Yassine 1984: 12).

Burial Positions and Orientation

The bodies of the males seem to have been in an extended position while those of the females were in a crouching position. Females were easily identifiable from their rich assortment of feminine articles, e.g., earrings, bracelets, kohl sticks, beads, necklaces, cosmetic vessels, and cosmetic packets. Some dependence on the grave goods as indicators of identifying the sex of the person buried can be risky. It is important, nevertheless, to note that the position of the skeletons coincides with the distinction based on the grave goods. The extended bodies were accompanied by such masculine equipment as swords, spears, and arrowheads, while graves having crouching bodies contained articles of feminine use referred to above. This assumption is not entirely agreed upon by physical anthropologists, even though around 70 percent of an *Antropologia* analysis coincides with the current archaeological conclusions.

The majority of the male graves lay east-west with head to the east within an error of a few degrees. Female graves had the same

east-west orientation due to the east, but there is an exception especially when a male grave was adjacent to a female grave. In that case the female grave took its direction from the adjacent male grave.

We have seen that the usual orientation included the ceremonial placing of the body towards the east. This firm rule has an affinity with Tall al-Duwar, near the First Temple, Lachish II pl. 5.3.5. Isolated graves oriented east-west would be 525, 4007, 4027 and 4096, 4015 (Lachish III 174); also Megiddo, Tomb 37C.1, Tomb 370 MI 79), Tomb 17 MT 117), Tomb 232 MT 132, Tomb 326 MI 33) and Tomb B57 MI 134), as well as 75 percent of the tombs of Tall al-Hesi (Googan 1975: 40). Comparable orientation also occurs at Tall Zoror (Hatchell Tell Zoror III 1970: d. VIII) and in Syria at Deve Huyuk (Morris 1960: 11). This firm rule governing the orientation of the body and the head, especially among males, must reflect a common social religious behavior and practices.

Some of the graves, pits, or even looted or reused, and were found empty as they appeared at the time of burial. The value of these finds in providing important knowledge about the burial practices of the people of Tall al-Mazar in the 10th century B.C. may not be underestimated.

Mortuary Equipment

Males and females buried in the Tall al-Mazar cemetery were about equally supplied with mortuary goods, suggesting that the position of women was not inferior to that of men. Social distinction between members of the same sex is more evident.

A few of the decorated and important mortuary goods. It is possible that Graves 10, 21, 33 and 34 are of those of more social status, belonging to the wealthy, higher ranks. This observation, however, requires further verification. It is interesting to draw an analogy from the tombs of the people of Egypt, Syria, and Mesopotamia, where the most expensive and valuable items were found. Mortuary equipment includes copper, bronze, and pottery vessels, copper/bronze pins, knives, daggers, swords, knives, arrowheads, spearheads, seals, or seal-shaped ornaments, scarabs, scarabs, and an immense number of beads of different materials. There are also necklaces, bracelets, armlets, belts, and anklets.

As a rule the gifts were placed near the head, or near the waist or between the knees. Although no traces of clothing survive, the presence of *hibu*ae near the shoulder or around the waist suggests that the bodies were usually dressed when buried. In some cases an impression of weaving could faintly be discerned in clay next to the body. Silver and copper earrings were found only on females. Knives, sticks and shells filled with tiny beads were usually found next to the body, east of the head. Beads were usually found around the neck. Stamp and cylinder seals were either on the chest or around the arm, frequently one suspended from the waist belt, commonly worn by males. Generally a row of beads was placed also pointing downwards, next to the left or right knee of the males. The position and orientation of these little circles well with the type of weaponry. Of all the copper bowls and jars found in situ, the majority were found next to the right side of the male's head, and were sometimes used as covers for pottery. Six copper bowls were found with *Phrygia* (Yassı, 1911).

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CHAPTER SEVEN

THE RELIGION OF THE ANIMONITES

WALTER E. ALBRECHT

1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 26

A religion is a system of beliefs and practices by which humans relate themselves to whatever it is they consider to be of ultimate importance. By this definition religions are human inventions and may be studied like all other human inventions.¹ The study of past religions, especially those of the remote past, is difficult because they are not directly observable. But this problem is not insurmountable. There is enough textual and archaeological evidence available for study. Even if no serious study were there, a lack of interest, held by the majority that agree with the view of religion seen in the case of the ancient Amorites, there is a single known text which fully depicts our present conception of deity and there is no single known method of locating it in the Age of the Colossal context that clearly and extensively can be associated with the Amorite religion. Therefore, confidently and objectively to categorize the Amorites, one must rely on major evidence and comparison of it with evidence of other religions of the Ancient Near East, especially of ancient Canaan.

In the last 150 years, the general character of the religions of the Ancient Near East and of ancient China have been established

I have been thinking about you very much lately, and wondering how you are getting on. I hope you are well and happy. I am still working hard, but I manage to find some time for my hobbies. I have been reading a lot of books lately, and I have also started gardening. It is very relaxing. I would love to hear from you soon. Write back when you have a chance. Love, [Name]

Notwithstanding the continuing vigorous debate on virtually all aspects of the topic, one may sketch Canaanite religion with some clarity. It had two main aspects: sacrificial and non-sacrificial, which interacted with each other at various levels.

The sacrificial cult was usually controlled by priesthood and temple and perhaps king and court. Sacrifice is a kind of barter between individual and deity. The individual gives the deity what it wants (the smell of burning fat seems to have been especially popular with Canaanite deities) and in return the deity gives the individual what it most wants: the state (health, wealth, happiness, offspring, a bountiful harvest and protection from pain, suffering, sickness, and malevolent spirits). Sacrifice is a mechanistic process. It must be performed *exactly* as the deity wants it, or it will not succeed. By always performing exactly perfectly, it will in theory always be successful. In order to establish sacrificial practice and maintain it according to the strict laws of the deity, a guild arises: the members of which are priests, the sacrificial specialists *pu'rim*. The guild controls the ceremonies of sacrifice and its associated cult.

Accoutrements of Canaanite sacrifice included texts which told among other things of how the gods created and maintained the heavens and earth, and how the gods also established their own cults, thereby validating priestly practice and status. They also included sacrificial prescriptions which details the sacrificial vessels, things like axes, knives, and jewelry, aspects and details as well as the materials to be sacrificed: plants and animals (including in some cases, evidently, man), in short everything which a priest needed and a deity liked. Special texts and para-liturgical texts (special poems, artists' manuals, instruction for toys and jewelry) were available and dependent on the priest, who grew still more powerful not to say wealthy over time.

In addition to priests, others in ancient Canaan had roles in the maintenance of religion and religious traditions, especially those that were non-sacrificial. Royalty performed rituals of one kind or another, as did the vast influential corps of sages, wizards, shamans, prophets, curers, prostitutes, professional fortune-tellers, magicians, diviners, necromancers, magicians, astrologers and the like, all of whom were members of the religious establishment.

A finer sketch with a different, albeit complementary, view is the excellent treatment of cult by Ockun (1990).

This was professional or public religion devoted to the unity or unity of a city or city-state as well as the maintenance of order under the unity's protection. If the city-state was large enough or powerful enough, *securitas* might be assumed into a pantheon or hierarchy, a kind of "divine council" of gods, the *ba'lm*, such as a ancient Ugarit. L. Hebrux (1970; Mullen 1980; Lemaire 1991: 1992: 48–49, 1994: 142–43). This "divine council" would rule heaven and earth, but would be led by a head god, or *nam*, in the case of Ugarit, *ba'lm*. It would then, separately, be *ba'lm*. This *ba'lm* god would be the national deity of the city or city-state, a kind of "national" deity.

Personal religion, however, and practice, though very different in its goal to obtain blessing by and nourishment from the *ba'lm*, was operated at a level somewhat different from a head religion. General, it was less concerned with the unity of a city and political realities than it was with the state and well-being of the individual. These realities. It, too, required gifts to a deity, sacrifices, and non-sacrificial offerings, but it also required prayers of praise and the keeping and vows of right thought and right action. But the deities, to whom these gifts, prayers, and vows were offered, were not necessarily the high deities of the state cults. Often, they were the more *ba'lm*, such as the *ba'lm* of the *ba'lm*, the *ba'lm*, the *ba'lm*, and individual who directed and assisted *ba'lm*. These are best understood by the opening of the *ba'lm* in personal and *ba'lm*.

No doubt popular religion also provided for such things as the interpretation of dreams, signs, and omens, and was concerned with ritual customs associated with death and the dead. Bach-Straul (1921, 1922). Here, too, a professional class of priests, interpreters, oracles, *ba'lm*, wizards, magicians, potion makers, and other intermediaries might be found, all requiring payment for guidance of success.

Weippert (1980) has shown that the *ba'lm* of the *ba'lm* is a kind of what is known as a *ba'lm* of the *ba'lm*. See also the *ba'lm* of the *ba'lm*.

his "collective" of *ba'lm* is a kind of *ba'lm* of the *ba'lm*. See also the *ba'lm* of the *ba'lm*.

The scholarly *ba'lm* of the *ba'lm* is a kind of *ba'lm* of the *ba'lm*. See also the *ba'lm* of the *ba'lm*.

The *ba'lm* of the *ba'lm* is a kind of *ba'lm* of the *ba'lm*. See also the *ba'lm* of the *ba'lm*.

Is what existed then was Ammonite religion either similar or coherent from the other religions of ancient Canaan? First, even before examination of any textual or archaeological data, it must be assumed that Ammonite religion was not *de jure* isolated and unaffected by the world in which it existed any more than any other aspect of Ammonite culture. Since it had, quite simply the assumption that Ammonite religion generally partook of the characteristics of Near Eastern and Canaanite religions.

Second, with regard to official or "state" religion, no text contains what could be identified as a temple image or a reference to a temple and its paraphernalia have yet been found in Iron Age or I-II century contexts. The 'Amman Citadel Inscription' (Afrasiy 1969: 10) hereafter *CI* has been interpreted as referring to the building of a temple (Cross 1969; Lemaire 1981: 112-53; Herr 1997: 172), though other interpretations are possible. Aufrecht (1979: 10) lists words that are interpreted as small shrines or cultic terms which were found at Tel. el-'Ummi and perhaps at the palace at Rabbat-Amman (Herr 1997: 172) but they might better be understood as evidence of popular not official religion.

This does not mean, however, that liturgical evidence is entirely lacking. The Tall Sira Book Description (A 78) contains what appears to be a petition from or on behalf of the king to a Christian holy man, possibly a hermit, for aid in his kingdom. This text, though rough and a "rough draft" or "product" of line one refers to the contents of the book (A 130). And there are scenes on seals which contain features which have been interpreted as being (A 79, 9) "typical human figures with arms upraised in a gesture of supplication." These interpretations, though possible, are highly tentative. In fact, no new liturgical evidence exists to the presence of a "new" or "old" liturgy and decorates.

X-ray diffraction studies of Ag₂S with 1992 Morita 1991 94 03, 188-95 and Su-

This assumption does not obscure recognition of what was *new* if a *new* religion, a new religion and culture. It simply acknowledges that what was new had to have a preparation, not a vacuum, for it to emerge. (Cross 1982: 430)

The evidence from M'awi includes a standing stone with a basin at the entrance to the settlement. H. J. F.

[illegible]

Hachic * Adel Inaria * Nartta * Il Mekon * Mor Nany *
Ner Oos Ramon Samas Sid Yabwch Yarn and Yera *

Several observations can be made about this list. First, the identification of some of the elements as theophoric is correct and

name of the Ammonites. Despite the popularity of the "Molech" tradition, scholars appear to be unanimous that whenever the text says, it means that Molech was the chief deity of the Ammonites. The repetition therefore of the apparently theophoric element *mlkm* in names in the tablets seems to be confirmation of a standard interpretation of 1 Kgs 11.

But there is a problem. Yalweh, according to the Hebrew model referred to, is the theophoric vocabulary, a name which is supposedly indeed *unique* in the vocabulary of Hebrew popular religion when Yalweh names are numbered (Lemaire 1983: 36-37; Avigad 1987: 190). In the Ammonite inscription, however, the frequency of *mlkm*-names are a fraction of *Yalweh*-names. On the basis of this evidence, it is hard to see why Molech should be considered the chief deity of the Ammonites, as the name of the scanty iconographic evidence that exists argues against it (Dayan and Dion 1994). This is not to say that Molech was not a popular, perhaps even important, Ammonite deity. It does suggest, however, that there is a need to construct an analogy with the cult of Yalweh that makes 'Il a *deus otiosus*.

Who, then, was the chief god of the Iron Age Ammonite cult? Based on the strongest archaeological evidence available, it probably was 'Il. This conclusion finds support in two ways. First, as Lemaire (1983: 37) observed, the word in the Dair 'Alla text "is the proper name of a deity and certainly not a compound noun" (see also Weippert 1991: 178-79). He correctly recognized Lemaire (1995: 335-39; 1991: 58) that this is evidence of the survival of the cult of 'Il in Iron Age Transjordan, strong support for the probability that it survived in Ammon as well. Second, there is the evidence of "popular" religion. Names with the theophoric element *mlkm* characteristic of and consistent with non-Hebrew, Canaanite religions.

In other words, Ammonite religion is clearly a mixture of Canaanite religion, and seems not to have differed significantly from it. Lemaire (1983: 37) has argued that the Ammonite deity Molech is a Canaanite deity, and in fact, it is identifiable. Clearly, as the name of the Ammonites. These apparent similarities between the Ammonite and Canaanite religions are also noted by Lemaire (1994: 49). Lemaire (1983: 334) also noted the evidence of "an autochthonous El cult of probable great antiquity" as God.

In other words, Ammonite religion is clearly a mixture of Canaanite religion, and seems not to have differed significantly from it.

Unfortunately, in 1 Kgs 11:7, the Bible identifies Molech as "the abomination of the Amorites" and in fact, it is identifiable. Clearly, as the name of the Ammonites. These apparent similarities between the Ammonite and Canaanite religions are also noted by Lemaire (1994: 49).

Lemaire (1983: 334) also noted the evidence of "an autochthonous El cult of probable great antiquity" as God.

Figay (1987: 187 n. 66) assumed that 'Il was the chief deity of the Ammonites, basing his argument, in part, on the frequency of the theophoric element *mlkm* in Ammonite names. His view is slightly different from the one presented here, which stresses the evidence of popular religion.

significant way. Ironically, this last may be the most compelling reason for identifying the Ammonite cult as that of 'El, the high god of Canaan.

Acknowledgements

I am grateful to Professor Larry G. Herr for providing me with unpublished materials, and to Professors Herr and D. Bruce MacKay for reading and commenting on early drafts of this essay.

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Abbreviations

AMM. ASSAL. A. Untersuchungen zur ammonitischen Rundbuckelma. *Ugarit Forschungen* 12 (1980) 1-27.

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CHAPTER EIGHT

AMMONITE TEXTS AND LANGUAGE

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The discovery in 1911 of the Amman Citadel Inscription and its subsequent publication (Herr 1961, 1962) may be said to signify the beginning of the modern North-West Semitic studies of epigraphy. Prior to the recognition of texts as *de Ammon*, language and script. Since then, a large number of texts have been identified as Ammonite. They come from three sources: excavations; trade in stolen antiquities (mostly seals); and texts already known but previously identified as Phoenician, Hebrew or Aramaic. Each year, as this process of identification continues, the number of excavated texts is virtually increasing. The conventions of classification following Herr 1978 identify inscriptions as "possibly Ammonite," "probably Ammonite" and "Ammonite." The value of this system is that it allows room for debate, out of which has come some progress and consensus. Of the 274 texts identified as Ammonite in one of these categories, 147 are listed in Verecht 1989 (hereafter *CV* in volume 27 continuing the *CV* numbering system) are listed in Appendix 1 below. The following discussion does not include *CV* items 1-15.

This classification system has been criticized (van Wyk 1993) but since the criterion does not rest on any recognizable methodological principles, it may be dismissed. Aufmann (1992)

discusses the following items as "possibly Ammonite": the Hebron Ostraca (formerly no. 62 (Lema 1975: 19); the Sahab Ostraca (Rudolph 1975: 73); the Tall al-Sa'idiyya Ostraca (Tubb 1983: 31-33); two 'Amman Citadel Ostraca (Dornemann 1983: 103; Hübner 1992: 38-39 nos. 2-3); and a Tall al-'Amar Ostraca (Lema 1975: 36). Some scholars relate the Dair 'Alla Plaster Texts to Ammonite (e.g., Hübner 1992: 39; in press; Greenfield 1990; and Puech 1985, 1987) for example, but suggest that these texts are written in an Ammonite script "Naveh-LN" (Hübner 1992: 39). These texts are written in an Ammonite script and in a dialect heretofore unknown (for the latter of which also see Hackley 1983; Tubb 1983; Greenfield 1990; and McCarter 1992). The scholars directly or indirectly Aramaic both in script and language. Hübner and van der Kooij (1976) These texts are not included here as part of the discussion of Ammonite texts and

which are Hebrew (C/1: 24a which is Meabic) and C/1: 57 and 6 which are forgeries. The discussion of the remaining 269 texts is organized according to the materials on which they are inscribed: stone (4), "new" pottery (ostraca written in ink or impressed) (8), clay bullae (3), bone (2), and gem stones (23).

The stone or monolithic inscriptions are all fragmentary. I. "Amman Statue Inscription" (C/1: 4) the language of which is Aramaic, is engraved on the base of statue of *ml'k*, a grandson of the Ammonite king Šamšī, mentioned in the account of the second campaign of Tiglath-pileser III (ca. 734-732) (Pritchard 1955: 262). The "Amman Theatre Inscription" (C/1: 58) was probably a building inscription though only words remain. II. "Amman Citadel inscription" (C/1: 59; Shea 1981; Margalit 1985: 200-214) is written in Aramaic script, though its language is Ammonite. It is the largest Ammonite inscription dated to the last half of the eighth century B.C. (Shea 1981). It is written in the form of an oracular command by the deity Milkom, a local deity, presumably of defensive purposes. Finally there are letters engraved on the backs of eyes which were attached to the heads of statues of women found on the "Amman Citadel" (C/1: 74). Probably engraved to indicate correct placement of the eyes by the artist (Israel 1997: 106).

Inscriptions which are not on a monolithic support. I. a metal ring weights (C/1: 54c, 105a), three seals (C/1: 159, 194, 206), a bronze bowl or cup from Kerbat Umm Udhayir with two names engraved on it (C/1: 116; Bevan 1996) and a bronze bowl from Tell Sana (C/1: 78). The latter inscription reads: "May the produce *ml'k* of 'Ammanab king of the Ammonites, the son of Hasi, of king of the Ammonites, the son of 'Amminadab king of the Ammonites, the vineyard and the garden(s) and the house and the cistern, cause rejoicing and gladness for many days to come and in years far off." This translation views the inscription as a kind of votive inscription. The term *ml'k* may also be translated "deeds," in which case the inscription is a kind of founding or commemorative inscription which may refer to the establishment of a royal pleasure garden (Lemaire 1991: 361-62).

language. For bibliography, see Aufrecht 1989: xcvi-xxix, Lemaire 1991a: 3-7 and Lipinski 1994: 103-70. The list also excludes several inscriptions awaiting publication.

On the issue of forgeries of Ammonite inscriptions, see the discussions by Hühner 1986: 299-300.

Texts written in ink or engraved in pottery include ostraca from the Jordanian sites of Tall Hibān, Tall al-Mazār, Tall al-Umayr, 'Amurāt and Nimrud, Iraq. Tall Hibān Ostraca may be described and dated as follows (Cross in press: A1 no. 4* = CAH 80), written in Ammonite cursive, is a record kept by a royal steward of the assignment or distribution from the royal stores of foodstuffs and other goods to courtiers and others to whom the crown is under obligation, dated ca. 500 BC. A1 no. 1 = CAH 81, written in Ammonite cursive, is a list of goods dated ca. 475 BC. A1 no. 2 = CAH 137 is a list of names dated ca. 500-475 BC, the end of the Ammonite cursive series; A4 no. 2 = CAH 76, inscribed in Aramaic cursive but probably written in the Ammonite language. Since 1977, may be a docket recording the distribution of rations of a ration-giving institution to agricultural workers dated ca. 425 BC. A1 no. 1 = CAH 61 and A6 = CAH 51 are lists of Ammonite names written in Aramaic script, dated to the end of the sixth century BC, and A7 no. 3 = CAH 81) is an Ammonite graffiti dated to the seventh century BC.⁶ Tall al-Mazār Ostraca 3 (CAH 144) is a personal letter dated by Cross (in press, *ca.* 500 BC) and one of the Tall al-Umayr Ostraca (CAH 211) may be a letter or a docket, also dated *ca.* 575 BC. Sanders 1991. The remaining written documentary texts Tall al-Mazār Ostraca 4, 5 and 7 (CAH 145-47), the Khirbat Umm al-Dinani Ostraca (CAH 100), the 'Amurāt Ostraca (CAH 77) (an ostraca with an engraving from Tall al-Umayr (CAH 171-5) and the Nimrud Ostraca (CAH 47).

There are three clay impressions of stamp seals, e.g. Hibān (CAH 200-206, 215) two from seals (CAH 36, 390) and 13 engraved gem

⁶ Cross in press has re-numbered the Hibān Ostraca. For convenience, the old numbers are used in this paper.

The language might be Aramaic. See the vocalization and translation of certain words suggested by Cross (1977: 106-107). See also the vocalization of Ammonite names in Cross (1979).

Halmer first argued (1977: 106) that the Hibān seal was a Moabite. But since 1992, identified A1 no. 1 = CAH 81 as Ammonite. His view is more popular. A1 no. 1 is a list of names. It is possible that some of the names are Moabite. But it is hard to find any Moabite names in the list. It is more likely that the names are Ammonite and not Moabite. A1 no. 1 is a list of names. It is possible that some of the names are Moabite. But it is hard to find any Moabite names in the list. It is more likely that the names are Ammonite and not Moabite.

The view that the Nimrud Ostraca is Ammonite has been challenged by Beitzel (1997: 106-107). He says that Ammonite pottery has been found at Nimrud (Israel 1997: 106) which increases the probability that the ostraca is Ammonite.

stone seals. The seals may be characterized as follows (updating Lamberg 1991):

- 83 seals of men with a patronymic
- 1 seal of a man with a matronymic
- 102 seals of men with a single name
- 1 seal of wives
- 14 seals of daughters
- 15 alphabet seals¹⁴

All of these inscriptions have been identified as Ammonite on the basis of the following criteria: provenance, onomatology, morphology, phonology, numerals, and language. Since all of these criteria are not applicable to every inscription, any single inscription does not in itself answer about their relative values. (Bordreuil 1992; Lamberg 1993; Hubner 1993; Hubner and Knauf 1994; Israel 1997; Heri 1998)

It is generally agreed that provenance is the most important criterion (Heri 1998; Bordreuil 1990b, 1992). Unfortunately, the vast majority of these inscriptions are unprovenanced. Moreover, even if an inscription is found in a controlled excavation, provenance still might not provide the primary criterion for identifying an inscription. Though the site may be considered "Ammonite," the language and onomatology of the inscription might be identified as something else, such as Moabite (e.g., 24a, 1a) or Hebrew (e.g., 1a). It is not always clear (see the location of the find, see below) whether a find lies within the Ammonite sphere of influence. Often the determination of site identity rests on tenuous or ambiguous evidence, such as La Bule's assignment of Histat to different spheres of influence (cf.

¹⁴ Among these seals are one seal on which there is only one grapheme, a pile of characters on 7 (e.g., 10, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000).

¹⁰ *Id.* If such cases are, must rely on other criteria of a reasonable person's conduct.

The one criterion that all descriptions have in common is palaeography, and for this reason it has become the *primus inter pares* of the classification criteria. Bordreuil 1986b: 192, 1 = 30; Isaac, 1991, 12; note 193. The basic principle of palaeography is that the shape of letters (in this case, on Iron II alphabetic texts) may be distinguished from each other by certain formal characteristics (see below).

Despite criticism by those who have neither an eye for memory for the palaeographer's eye or a taste to work out the broad outlines and in some cases the narrow details of the evolution of Iron II alphabetic script, notices of interpretation and opinion withstanding. This is important because once the script, language and identity of the inscription is determined, the palaeographer is often able to provide direct or indirect help to date, situate and debunk relative and absolute chronologies. McLean 1992

The first paleographic analysis in which an Aramaic inscription was identified was published by Wiedel (1910), in which he related the Aramaic script to the Aramaic script. Since then the dominant discussion regarding Aramaic writing has focused on the question of whether the Aramaeans used a written form of the current Aramaic script, or developed their own original script.

The first view, presented most clearly by Naveh,¹⁰ is that the Ammonites wrote in the Aramaic script and could develop a fully adequate writing and form of their own. One should speak of Aramaic written in an Ammonite style.

The second view has been argued by Cross (1969a, 1969b, 1973a, 1973b, 1974, 1976, 1978, 1980, 1998), Hackett (1984a) and Jackson (1984b). According to this view, Aramaic handwriting became independent of its parent Aramaic script in the mid eighth century BC and thereafter developed more slowly than its parent. This national script ceased to exist in the late sixth century BC, when it was replaced by the Aramaic script of the Persian

[illegible]

right angles and leftward *ay* (C II 73) square *aym* (C II 74) *ph* with squared head (C II 75) *ade* with two-stroke *read* (C II 76) *ad* with triangular head (C II 78). Most letters have a vertical or upward stroke. The heads of letters with closed curves (*be*, *de*, *gh* and *resh*) open at the end of the seventh century B.C. (Herr 1980). The mix of open and closed forms is also an indicator of Ammonite writing (Herr 1978, 1980, 1989; Aufrecht 1992; Herr 1993).

The third criterion of identification of Ammonite texts is iconography, confined almost exclusively to seals. Early studies of iconography on Northwest Semitic seals such as those by Galling (1941) and Porada (1948) contained seals now reclassified as Ammonite. It is clear from these that the iconography of these inscriptions is related to and part of the general Near Eastern iconographic tradition. The problem is in determining if and to what extent the subjects of Ammon employed distinctive and standard designs, ones not used by designers on other local seals such as the *rhinoceros* and *lion* motif (see Aufrecht 1989: 351–52). Recently two studies have appeared which attempt to advance the discussion by trying to distinguish Ammonite iconography from that of other Near Eastern cultures (Hubner 1993; Lemaire 1995). It must be said, however, that iconography, even if ever, is a primary criterion for identification of inscriptions as Ammonite.¹⁰ Rather, iconography is best used in combination with other criteria such as palaeography and onomastics.

The fourth criterion for identifying Ammonite inscriptions is onomastics. Unlike iconography, it can be a primary criterion with the others in the identification of a text. Usually, however, onomastics plays a secondary, but nonetheless important, role in confirming and/or correcting the identity of an inscription already established on other grounds of provenance or palaeography.

Systematic treatments of the names found in Ammonite inscriptions have been written by Jackson (1955a), Israel (1990, 1992) and Bordreuil (1992). By other studies, such as that of O'Connor (1987), have contributed significantly to our understanding of Ammonite names (see Aufrecht 1989: vii–xvii). First names on Ammonite

¹⁰ For example, C II 2, 54b and 160 all contain the motif *rhinoceros* with *rhinoceros* all if iconography were a primary diagnostic Ammonite criterion. However, it can be designated as Ammonite on other grounds, such as palaeography, onomastics (Lemaire 1995: 16) and Aufrecht (1989: 351–52). The *rhinoceros* motif was also a significant Ammonite motif on palaeographic grounds.

addicted, and others whose treatments have been less complete (see Anderson 1969: xii-xiv; Retsburg *ibid.*; Hori 1980; Israel 1981a; Knud 1990; Hübner and Krauß 1991; Margalit 1993; Hende 1996) have recognized that by the standards of comparative Semitic linguistics, Aramitic should be assigned to the Canaanite family of languages. It is important to remember that by 'Aramitic Language' we mean a modern scholarly reconstruction which is indebted to the language spoken in the 1st century AD, or a little later, at best (Hübner and Krauß 1991). This is a well-studied language (Gunn 1981: 229) whose geography is correct. Aramitic stands closer to standard Phoenician than to any other of the Northwest Semitic languages. And, as my observations will have to be made to Gresseth's (Knud and Mørk 1985) work should be a counter-argument against a too facile treatment of the relationship of these languages to other Semitic languages. This is especially true with regard to the pronunciation of words (i.e. vocalization in Aramitic inscriptions is as if they were Hebrew) – supporting future (or, perhaps, of the recent corpus of Northwest Semitic words by Avigad and Sass 1987). Such a procedure obscures whatever hints there may be for distinguishing between the sounds of Aramitic and Hebrew. It often results in the notion that there is a close similarity of phonetics (if not of lexicon) between the two languages, and then Aramitic is thought to have been Hebrew (Avigad 1981: 36, 1983: 3) as if it is a corrupt copy of Hebrew. This begs the question of who or one should speak about the Aramitic language in the Aramitic dialect of something like. Unfortunately, it is impossible at this time to resolve this issue. The copies of Aramitic texts are neither large enough nor sufficiently varied to provide a decisive dataset of phonological, morphological, syntactical, and lexical features. Nevertheless, the following data may be preserved as features which to a greater or lesser degree characterize the Aramitic language.

1. Phonology

Phonology is exceedingly difficult to reconstruct in ancient texts and even more so in such a small corpus. In the case of Aramitic, one

While there may be some reflection of Aramitic in some Ptolemaic (Gunn 1981: 231) and Talmudic (Gresseth 1985) texts, no other aspects of language.

must be guided by a principle such as that established by Hackett in her commentary on the Dahr 'Allā Plaster Texts 1984a: 22–23. By using the earliest possible form of a word, one usually does not have to choose between later in this case Aramaic and Hebrew vocalizations, thereby prejudging the classification of a dialect. Such a procedure also usually helps to postpone the problem of language vs. context until more evidence is available. Given these limitations, the following phonological data appear to be characteristics of Ammonite:

Correspondence of Proto-Semitic sounds:

ā / <ō> / [ō] *mlkm*, CAI 1b:2

u / <u> / [a] or [ō]¹ *bd*, CAI 1b:3

d / <z> / [z] *ʕr*, CAI 43:2

q / <s> / [s] (*ʕn*, CAI 80:2)

t / <š> / [t] or [š]² *ʕbʕ*, CAI 41

ay / <u> / [ē] *ym*, CAI 80:7:1, *bn*, CAI 70:1:4

aw / <w> / [aw] *ymt*, CAI 78:1

final /at/ <t> / [at] *qnt*, CAI 78:4:2, *ʕht*, CAI 78:5:1

final /h/ <h> / [ō] (*hwh*, CAI 59:1:1 [Garr 1985: 136], *thkt*, CAI 56 [Jackson 1983b: 78])

assimilation of *nan* *hslʔ* < **ns*, CAI 78:2:2 *mʔu*

**mn* / *u* CAI 80:4:2,³ *ʔm* < **nm*, CAI 144:2)

prothetic **aleph* *ʔht*, CAI 78:5:1

¹ The following grapheme is cited for *ay* in the Ammonite text, but it is not clear whether it is a variant of *ay* or a different letter.

² The occurrence of the so-called Phoenician shift in Ammonite is ambiguous. See, for example, Carr 1979: 13, Carr 1985: 32–33, 55 and Lipschitz 1986: 44.

³ The phonetic value of /*u*/ in Ammonite texts is in dispute. Knauf and Munnich 1988: 100–101 and Knauf 1990: 100–101 argued that Ammonite retained the phonetic value of the grapheme /*u*/ (unlike other Canaanite dialects). Hendel 1990: 122–123, however, claims that in Canaanite dialects, Ammonite pronounced *ay*.

The reading now seems sure (Goss in press, Margalit 1995: 205 n. 2nd edn, Purvis alternate reading 1985: 13) and attributes significance to the absence of Ammonite *ay* in the Ammonite text. However, the absence of *ay* in the Ammonite text is more apparent than real: the **mʔu* of CAI 80:4:2 is not listed because the reading by Carr 1979: 13 was *mʔu* (as opposed to *mʔu*), which was the reading of the proper name *ʔu*, also omitted from the listings of Hendel 1990: 122–123. The same was their principle of omitting all proper names. The *mʔu* of CAI 80:4:2 was not listed by Hofjizer and Jongeling because there is no *ay* following it, which is the basis of their discussion of pp. 104–105.

Particle of existence (*ʾl*, *ʿAl* 113)

Noun

ending of m.pl./dual absolute (*m*, *ʿAl* 78:7-2)

ending of m.pl. construct (<u> [ē] or [i])

hn, *ʿAl* 78:1-4 [Garr 1985: 9]ending of f.s. absolute (<ī> [ai] *gn*,*ʿAl* 78:4-2)ending of f.pl. absolute (<i> [oi] *ʿom*,*ʿAl* 78:7-1)

3 m.s. possessive suffix (<h> [uh] or [ah])

hh, *ʿAl* 144:1-4 [Garr 1985: 55, 102]

Verb

3 m.s. perfect of the strong verb (*nh*,*ʿAl* 80:6-5)1 s. imperfect of the strong verb (*ʾlhd*,*ʿAl* 59:3-1)3 m.s. perfect of final weak verbs (*nh*,*ʿAl* 59:1-1)

3 m.s. imperfect (passive) (<n>

[n]), *ʾmtn*, *ʿAl* 59:2-4; *ʾlhn*, *ʿAl* 59:43 m.s. objective suffix (*thkh*, *ʿAl* 50,G-stem passive participle *hkh*, *ʿAl* 55)G-stem infinitive absolute (*ml*, *ʿAl* 59:2-1)*ʾhl*, *ʿAl* 144:3-1)G-stem imperative (*mr*, *ʿAl* 144:1-3; *h* < **mtn*,*ʿAl* 144:4-2)D-stem participle (*mhb*, *ʿAl* 59:2-2)

[Garr 1985: 133]

causative prefix (*h*, *ʿAl* 78:2-2)

I followed the *ʿAl* model of Amman Citadel Inscription (*ʿAl* 59:2-4) in assuming that Ammonite may not have preserved a morphological distinction between G-basis and D-basis verbs (Garr 1985: 12).

The absence of *w* in *ml* < **mut* (*ʿAl* 59:2-4) may indicate that in Ammonite, the original biconsonantal root was not

[Garr 1985: 25] noted that it is unclear whether the *ʾmtn* form **mtn* was perfect or whether it is a biconsonantal root **mtn* according to **mtn*.

Brown and others (1988) also noted that *ʾmtn* is a biconsonantal root. Jackson (1980: 1) also noted that *ʾmtn* was a biconsonantal participle.

reconstructed according to the pattern of a strong, triconsonantal root as it was so reconstructed in Old Aramaic (Garr 1985: 32, but contrast *ḥmrt* C/I 44).

4. Syntax and style

The evidence of syntax and style is meager in Ammonite texts. That is because there is only one complete long inscription (the Tall Biran Baile = C/I 78) and three others that, though relatively long, are fragmentary (the Amman Citadel Inscription = C/I 59, Hishan Ostrakon A1 [formerly No. 4] = C/I 80 and Tall al-Mazār Ostrakon 1 = C/I 144). The following are represented:

repetition of coordinated prepositions (C/I 78: 7-8)

hi to vti as first element in many clauses (C/I 78: 6/8)

membra synonyma found in C/I 59: 2 suggests the possibility that there was originally a single period consisting of two symmetrical coordinated clauses (cf. p. 13 below; Margalit 1981: 200) or, at least, word pairs *ma...shu* (C/I 59: 2/3) and *g...ndu* (C/I 78: 6/8) and *...ydu* (C/I 78: 7/8) and *...dm/dpt* (C/I 78: 2/3),

the latter two exhibiting a chiasmic structure

Hebraic numerals are used in Ammonite ostraca (C/I 65, 80-5).

Letter in the form of a docket (C/I 80) or a personal communication (C/I 144).

religious formulae "blessed of" (C/I 55; "may she bless him" C/I 56).

5. Lexicon

The Ammonite lexicon exhibits a wide variety of words, especially in name-formation (Jackson 1960b: 93-98; Israel 1979: 152-154; 1981).

coordinating conjunction *w* (C/I 78: 4)

the root *shy* instead of Phoenician *huy* (C/I 23:1)

¹¹ Israel 1979: 154 cited examples of these word pairs in Ugaritic, Phoenician and Hebrew texts.

11. ~~no~~ ~~ntn~~ instead of Phoenician ~~ntn~~ CAI 32. 144 2 3
 bn instead of Aramaic ~~bn~~ 'son'
 bt < *bnt instead of Aramaic ~~bn~~ 'daughter'
 place names: ~~b~~ (CAI 90:4), ~~bat~~ (CAI 37:14), ~~gb~~ (CAI 76:4 2), ~~mn~~ (CAI 171:72), ~~skt~~ (CAI 76:2 1), ~~sdn~~ (CAI 6)
 ethnic identification or nationality: ~~mn~~ 'Egyptian' (CAI 8a)
 family relationships: ~~b~~ (CAI 23), ~~d~~ (CAI 139), ~~b~~ (CAI 16), ~~bt~~ (CAI 1), ~~mr~~ (CAI 36), < *nh (CAI 3a), ~~st~~ (CAI 2a), ~~bn~~ (CAI 3), ~~br~~ (CAI 4), ~~bt~~ (CAI 9a), ~~ht~~ (CAI 130), ~~hm~~ (CAI 13)
 units of weight and measurement: ~~bq'~~ (CAI 34), ~~lql~~ (CAI 137:9 3)
 other substantives: ~~bt~~ (CAI 182), ~~ht~~ (CAI 204), ~~wr~~ (CAI 10b), ~~m~~ (CAI 21a), ~~th~~ (CAI 10), ~~bm~~ (CAI 59:6 3), ~~bn~~ (CAI 104), ~~mt~~ (CAI 183), ~~nh~~ (CAI 80:5 4), ~~s~~ (CAI 78b), ~~sm~~ (CAI 71b), ~~ht~~ (CAI 8a), ~~br~~ (CAI 9), ~~bt~~ (CAI 134), ~~bt~~ (CAI 51), ~~gb~~ (CAI 76:4 2), ~~dly~~ (CAI 59), ~~dl'~~ (CAI 80:9 2), ~~hbt~~ (CAI 94:4 1), ~~hg~~ (CAI 4), ~~hz~~ (CAI 47), ~~hmn~~ (CAI 55), ~~rum~~ (CAI 78), ~~ym~~ (CAI 80:7 1), ~~rb~~ (CAI 90), ~~kbs~~ (CAI 47:14 3), ~~km~~ (CAI 78:4 1), ~~lhb~~ (CAI 80:7 5), ~~ngh~~ (CAI 10), ~~ngr~~ (CAI 10), ~~nbr~~ (CAI 81), ~~nqr~~ (CAI 16), ~~mt~~ (CAI 110), ~~mn~~ (CAI 189), ~~ngrd~~ (CAI 21:4), ~~ndb~~ (CAI 16), ~~na~~ (CAI 40), ~~nh't~~ (CAI 80:4 3), ~~nqr~~ (CAI 137:5 1), ~~br~~ (CAI 77), ~~sdh~~ (CAI 11), ~~st~~ (CAI 13), ~~mk~~ (CAI 10), ~~m~~ (CAI 6), ~~pdm~~ (CAI 76), ~~s'n~~ (CAI 80:2 1), ~~sdq~~ (CAI 59:4 4), ~~rhm~~ (CAI 78:7 2), ~~rhq~~ (CAI 78:8), ~~sd~~ (CAI 2), ~~st~~ (CAI 18), ~~bn~~ (CAI 9:3 1), ~~m~~ (CAI 5), ~~nh~~ (CAI 78:7 3), ~~st~~ (CAI 144:2 4), ~~rb~~ (CAI 182), ~~rn~~ (CAI 94)
 verbs: ~~zn~~ (CAI 8), ~~ms~~ (CAI 5), ~~mr~~ (CAI 67), ~~s~~ (CAI 147:2), ~~ty~~ (CAI 147:1:1), ~~bu'~~ (CAI 59:1 4), ~~bkr~~ (CAI 4c), ~~bny~~ (CAI 58), ~~bt~~ (CAI 10), ~~bt~~ (CAI 19:6), ~~bq~~ (CAI 5), ~~bn~~ (CAI 1), ~~br~~ (CAI 1), ~~gy~~ (CAI 78:6), ~~mn~~ (CAI 5), ~~ddb~~ (CAI 11), ~~dn~~ (CAI 14), ~~dlh~~ (CAI 35a), ~~zkk~~ (CAI 136), ~~zkr~~ (CAI 134), ~~hvy~~ (CAI 23), ~~hzy~~ (CAI 59b), ~~hlq~~ (CAI 204), ~~hnn~~ (CAI 8), ~~hrs~~ (CAI 18a), ~~hrr~~ (CAI 78:5 3), ~~sd'~~ (CAI 13), ~~st~~ (CAI 13), ~~st~~ (CAI 13), ~~st~~ (CAI 13), ~~st~~ (CAI 17b), ~~kbs~~ (CAI 59:5 4), ~~khd~~ (CAI 59:5 4), ~~hst~~ (CAI 137:1 1), ~~hm~~ (CAI 59:4 3), ~~mgn~~ (CAI 100), ~~must~~ (CAI 59), ~~nmh~~ (CAI 124)

See footnote 19 above.

See also footnotes 19-25 above. In this section and the one following, only the names of the texts in the Aramaic section of the complete list of citations (excluding the texts in Appendix I, below), may be found in *Autrecht 1989*: 356-76, and a complete list of theophoric elements and Aramaic names may be found above on pp. 150-1.

mšl (CAI 91), *ndr* (CAI 56), *nhm* (CAI 23), *n'm* (CAI 80 3.3), *npr* (CAI 57), *nqm* (CAI 13.9), *qib* (CAI 32), *sh* (CAI 54), *spk* (CAI 30b), *str* (CAI 29c), *'dy* (CAI 31), *'dn* (CAI 152), *'h* (CAI 14c), *'zz* (CAI 2), *'zr* (CAI 38), *'yr* (CAI 36), *'ms* (CAI 51), *'ns* (CAI 44), *in* (CAI 34), *rbn* (CAI 111.34), *ru* (CAI 6), *poly* (CAI 8), *plt* (CAI 7), *qr* (CAI 5), *rcm* (CAI 13), *rc* (CAI 2), *rk* (CAI 59a), *rp* (CAI 65 3.2), *zgb* (CAI 9), *hcb* (CAI 41), *šmh* (CAI 7), *šm'* (CAI 9), *šmr* (CAI 148), *šy* (CAI 59-61), *šy'* (CAI 210), *mk* (CAI 1b 1), *tmn* (CAI 15).

unknown words: *'br?* (CAI 175), *'bz?* (CAI 181), *'gbt* (CAI 16), *idf?* (CAI 31a), *'š* (CAI 117a), *bnay* (CAI 137 11.1), *hš* (CAI 54), *gmm* (CAI 2), *dbth* (CAI 14), *db'h* (CAI 15), *hpn* (CAI 11), *wp* (CAI 52), *zy'* (CAI 131a), *zvr* (CAI 170), *hly* (CAI 139), *hmyt* (CAI 117), *hryt* (CAI 178), *hš* (CAI 69, 74), *khy* (CAI 176), *mmh* (CAI 1a), *nd'hw* (CAI 197), *sdd* (CAI 152), *amt* (CAI 117), *'tbl'h* (CAI 208), *psh* (CAI 176), *pm* (CAI 6), *ppr* (CAI 61), *qpf* (CAI 203), *šmhl* (CAI 191), *lgy* (CAI 136).

Lexical document

I am grateful to Professors Frank M. Cross and Larry G. Herr for permitting me to use material in their as yet unpublished manuscripts, and to Professors Herr and D. Bruce MacKay for their helpful comments on earlier drafts of this paper.

Appendix I

The following B2 texts should be added to the *Lexical list* in CAI:

1. *Lebanon* de L'Anas 1818, pl. 31
2. *mmh* *Lebanon* de L'Anas 1818, pl. 30
3. *hmyt* *Lebanon* de L'Anas 1818, pl. 148
4. *hmyt* Rawlinson 1854, no. 14
5. *hmyt* de Vogue 1868, no. 1

Inscription No. 1 in CAI has been renumbered 1.

The inscription numbers with letter designations were renumbered after the completion of CAI. They are numbered in accordance with the original format of that corpus see *Awcock 1989: xxix*.

- 4b. *de* de Vogue 1868 no. 3
 4c. *ba* de Vogue 1868 no. 4
 5a. *im* de Vogue 1868 no. 13
 6b. *ap* de Vogue 1868 no. 17
 7c. *im* de Vogue 1868 no. 40
 8c. *ap* de Vogue 1868 no. 40
 9a. *de* de Vogue 1868 no. 40
 10a. *im* de Vogue 1868 no. 40
 11a. *im* de Vogue 1868 no. 40
 12a. *im* de Vogue 1868 no. 40
 13a. *im* de Vogue 1868 no. 40
 14a. *im* de Vogue 1868 no. 40
 15a. *im* de Vogue 1868 no. 40
 16a. *im* de Vogue 1868 no. 40
 17a. *im* de Vogue 1868 no. 40
 18a. *im* de Vogue 1868 no. 40
 19a. *im* de Vogue 1868 no. 40
 20a. *im* de Vogue 1868 no. 40
 21a. *im* de Vogue 1868 no. 40
 22a. *im* de Vogue 1868 no. 40
 23a. *im* de Vogue 1868 no. 40
 24a. *im* de Vogue 1868 no. 40
 25a. *im* de Vogue 1868 no. 40
 26a. *im* de Vogue 1868 no. 40
 27a. *im* de Vogue 1868 no. 40
 28a. *im* de Vogue 1868 no. 40
 29a. *im* de Vogue 1868 no. 40
 30a. *im* de Vogue 1868 no. 40
 31a. *im* de Vogue 1868 no. 40
 32a. *im* de Vogue 1868 no. 40
 33a. *im* de Vogue 1868 no. 40
 34a. *im* de Vogue 1868 no. 40
 35a. *im* de Vogue 1868 no. 40
 36a. *im* de Vogue 1868 no. 40
 37a. *im* de Vogue 1868 no. 40
 38a. *im* de Vogue 1868 no. 40
 39a. *im* de Vogue 1868 no. 40
 40a. *im* de Vogue 1868 no. 40
 41a. *im* de Vogue 1868 no. 40
 42a. *im* de Vogue 1868 no. 40
 43a. *im* de Vogue 1868 no. 40
 44a. *im* de Vogue 1868 no. 40
 45a. *im* de Vogue 1868 no. 40
 46a. *im* de Vogue 1868 no. 40
 47a. *im* de Vogue 1868 no. 40
 48a. *im* de Vogue 1868 no. 40
 49a. *im* de Vogue 1868 no. 40
 50a. *im* de Vogue 1868 no. 40
 51a. *im* de Vogue 1868 no. 40
 52a. *im* de Vogue 1868 no. 40
 53a. *im* de Vogue 1868 no. 40
 54a. *im* de Vogue 1868 no. 40
 55a. *im* de Vogue 1868 no. 40
 56a. *im* de Vogue 1868 no. 40
 57a. *im* de Vogue 1868 no. 40
 58a. *im* de Vogue 1868 no. 40
 59a. *im* de Vogue 1868 no. 40
 60a. *im* de Vogue 1868 no. 40
 61a. *im* de Vogue 1868 no. 40
 62a. *im* de Vogue 1868 no. 40
 63a. *im* de Vogue 1868 no. 40
 64a. *im* de Vogue 1868 no. 40
 65a. *im* de Vogue 1868 no. 40
 66a. *im* de Vogue 1868 no. 40
 67a. *im* de Vogue 1868 no. 40
 68a. *im* de Vogue 1868 no. 40
 69a. *im* de Vogue 1868 no. 40
 70a. *im* de Vogue 1868 no. 40
 71a. *im* de Vogue 1868 no. 40
 72a. *im* de Vogue 1868 no. 40
 73a. *im* de Vogue 1868 no. 40
 74a. *im* de Vogue 1868 no. 40
 75a. *im* de Vogue 1868 no. 40
 76a. *im* de Vogue 1868 no. 40
 77a. *im* de Vogue 1868 no. 40
 78a. *im* de Vogue 1868 no. 40
 79a. *im* de Vogue 1868 no. 40
 80a. *im* de Vogue 1868 no. 40
 81a. *im* de Vogue 1868 no. 40
 82a. *im* de Vogue 1868 no. 40
 83a. *im* de Vogue 1868 no. 40
 84a. *im* de Vogue 1868 no. 40
 85a. *im* de Vogue 1868 no. 40
 86a. *im* de Vogue 1868 no. 40
 87a. *im* de Vogue 1868 no. 40
 88a. *im* de Vogue 1868 no. 40
 89a. *im* de Vogue 1868 no. 40
 90a. *im* de Vogue 1868 no. 40
 91a. *im* de Vogue 1868 no. 40
 92a. *im* de Vogue 1868 no. 40
 93a. *im* de Vogue 1868 no. 40
 94a. *im* de Vogue 1868 no. 40
 95a. *im* de Vogue 1868 no. 40
 96a. *im* de Vogue 1868 no. 40
 97a. *im* de Vogue 1868 no. 40
 98a. *im* de Vogue 1868 no. 40
 99a. *im* de Vogue 1868 no. 40
 100a. *im* de Vogue 1868 no. 40

This seal was No. 17a in Aufrecht 1989: 342

This seal was No. 30a in A. G. 1989: 311

This seal was No. 54a in Aufrecht 1989: 344 1

- 2.10 *həllh[u]χtʃh[ʔ]* Avigad and Sass 1997 no. 104
201 *ladrn* Avigad and Sass 1997 no. 105
2.12 *ʔbdʔ* Avigad and Sass 1997 no. 113
2.13 *lqrp.l* Avigad and Sass 1997 no. 115
2.14 *lʔʃh[ʔ] b[ʔ] h[ʔ]* Avigad and Sass 1997 no. 120
205 *ʔb* Avigad and Sass 1997 no. 121
206 *lɪh[ʔ]* Avigad and Sass 1997 no. 126
207 *ʔbdʔ.l* Avigad and Sass 1997 no. 110
208 *ʔbʔb* Avigad and Sass 1997 no. 116
209 *lʔʔrm hsp* Deutsch and Heltzer 1999 no. 106
2.10 *ʔb* Deutsch and Heltzer 1999 no. 107
2.11 *[ʔʔ h[ʔ] k.k.b./] h[ʔ]ʔʔ b[ʔ]* *n[ʔ] ʔp[ʔ]* *h[ʔ]* Sanders 1997
2.12 *bʔyʃ[ʔ]ʔ m[ʔ] k.b...* Deutsch 1997
2.13 *ʔrkʔʔ h[ʔ]k*
2.14 *ʔm ʔp[ʔ] k* *[ʔ]ʔm b[ʔ] ʔp[ʔ]* *ʔm b[ʔ] p[ʔ]ʔʔ* *ʔb* Cross 1998
no. 30

$$J_5 = f_2' f_4' f_5' f_6' f_7'$$

- [illegible]

- [illegible]

- [illegible]

- [illegible]

- [illegible]

CHAPTER NINE

THE EMERGENCE OF THE AMMONITES

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Models for Canaanite Social Dynamics During LB I A-B

There seems to be a general agreement that a most significant social transition occurred in Palestine both Cistern and Transjordan between the end of the Late Bronze Age and the beginning of the Iron Age. The former saw the collapse of the Canaanite polities which the latter witnessed the rise of the Iron Age polities of Israel, Judah, Moab, and, of course, Ammon. The rise of these polities has generated various important and interesting speculation. Speculation has particularly focused on the process that led to the emergence of these polities. Unfortunately, the scanty nature of the archaeological evidence has made it difficult to reconstruct this process with any confidence or certainty. At base, the archaeological evidence now recorded suggests that the highlands of Palestine both Cistern and Transjordan witnessed a transformation from a non-sedentary pastoral society to that of small agricultural villages and finally to a three-tiered settlement hierarchy of cities, towns and villages. The latter was embedded within and supported the Iron Age kingdoms of Israel, Judah, Moab and Ammon. The settlement pattern of the Late Bronze/Iron Age transition clearly points to a social organizational transformation of increasing complexity.

The traditional explanation as to what initiated this process of settlement and its rapid societal change have centered around a conquest model or peaceful infiltration model and more recently some sort of a indigenous social transformation model (see Stacks 1991). It should be noted that these reconstructions generally focus

For a more comprehensive review of the major (and arguable) positions on this article, see the author's dissertation (Younger 1993).

on the emergence of Israel are combine various interpretations of the Hebrew Bible (especially the Exodus/Canaanite accounts with the archaeological evidence). While this is definitely a legitimate approach, those of us interested in the emergence of the Ammonites lack the equivalent of an Ammonite Bible, and thus their study must rely heavily on the archaeological record and the few extrabiblical sources that exist in reconstructing the process of Ammon's emergence.

Recent anthropological approaches can also provide a useful analytical framework for identifying, organizing, and interpreting these data relevant to social change (see LaBianca and Youngs 1993). The most useful recent approach I have seen for both isolating the elements which contribute to the process of changing societal organization (complexity) and for understanding the process of social change, is that of Rothman (1991) and Stein (1991). They refer to the process of changing social organization/complexity as the "organizational dynamics of complexity." Rothman and Stein argue that in order to understand these dynamics, it is first necessary to recognize and accept that social complexity is a process, not a static condition. Social complexity is a process because it is always changing, and it is always changing through processes—migration, intergroup interaction, the development of new ideas and institutions, and interaction with external forces and sociopolitical forces. Both the process and the processes are illuminated through a combination of archaeology, written sources, and anthropological models.

9.1.1 Models of Generation, Resilience, and Regeneration in Civilization

To date, the most explicit attempt to isolate and understand the evolutionary of social change in ancient Palestine utilizing this approach is that advocated by Rothman and Stein (see Stein 1991, 1993), albeit his study is restricted to the Early Bronze Age. Before discussing the approach, it is useful to note that Early Bronze Palestine's social dynamics revolved (for the first time) around a new social organization, the Late Palestine or Canaanite society that set it apart from neighboring societies in Mesopotamia and Egypt. Whereas in Mesopotamia, the base social unit was the city, and in Egypt it was the nome, in Canaan the base social organizational unit was the kinship group with the nuclear family as the basic unit.

Joffe points out that there were a number of reasons why the kinship group was the basic social organizational unit in Canaan. Two of the most significant are the geographical and environmental constraints (1993: 24). Canaan is a relatively small country with a marginal environment. In terms of Canaan is a highly variegated land in terms of topography, natural resources and local climatic conditions (see Hopkins 1990). It is given that some parts of the country may be able to produce wheat, others citrus, olives, etc. are extremely difficult. Agriculture is in proximity with neighboring peoples, who may be able to survive in this marginal environment. Such arrangements were naturally most likely made with those who they could do this. They are not. This is because of the marginal and subsistence uncertainties that resulted from the marginal environment led to a situation in which changes in social complexity in Canaan were structured around and through the fundamental kinship unit. According to Joffe, preserving the basic kinship units in the ancient Levant was an adaptive device that enabled the capacity for rapid downward reorganization in the event of social collapse. This is a very interesting social reorganization strategy was initially used by Sumerians in the 3rd millennium BC. This was not responsive to Egyptian (or Mesopotamian) social evolutionary patterns, trajectories, or culture; if it would have been, the capacity for reversion would have been compromised (Joffe 1990: 60).

Under the basic Canaanite kinship unit, there were different social sectors or components whose individual and external activities operated at a higher level of complexity. These include the *city*, the *city-state*, the *city-state*, the *city-state*, which could be subdivided into lowland and highland components, and the *nomadic* or *nomadic* sector (Joffe 2003: 8). However, as these sectors merged, they were complementary and interrelated with each other (Joffe 2003: 10). However, as the kinship unit developed, new patterns of social relations were formed (Joffe 2003: 12). In the lowland, the kinship unit of the *city-state* separated identity over and over again. It is the central dweller or nomadic. Moreover, it appears that a power imbalance emerged between urban, rural, and nomadic sectors of society (Joffe 2003). According to Rosen (1977: 96-97), the rural sector became increasingly dependent upon the urban for the seed, the storage of a fertility cult, and the redistribution of cereals. Han (1995: 314) argues that it was essentially these same

in the phenomenon of the "*Hab/piru*," which Joffe views not as rural banditry, but rather as an "out-migration and social re-identification, as institutionalized responses" to the threats posed by the urban centers and Egyptian authorities (for a similar view see Bunickovitz 1995: 326-327). Joffe suggests that the al-Amarna Letters, which clearly reflect the negative attitudes of urban society toward those who chose to remove themselves from the control of centralized authority of Asore, Had Gonen, and Yam in 1963; Finkelstein 1983: 339-341) provide a hint of the complete lack of hostility with which the rural highlanders viewed the city-states (1993: 91).

It is important to remember that while many see those who fled to the highlands often identified with the *Hab/piru*, as refugees from the Canaanite city-states, Joffe's model views the tension as existing between the sedentary urban centers and the kin-based countryside. The sedentary and non-sedentary rural populations. While site size data do seem to suggest a decline in the urban centers proper (Gonen 1984; Finkelstein 1988: 341-345; 1994: 74), it was the rural hinterland, those smaller towns and their dependent farms who bore the burden of supporting the city-state (Gonen 1994: 212) upon whom the greater burden of taxes and tribute would have fallen, the who consequently would have been highly motivated to leave. Their departure would have contributed to a decline of the urban centers themselves. Undoubtedly as Joffe proposes, kinship was the principal social organizing factor for the tiny, small villages and farms. The departure of these folks would have greatly undermined the economic foundation of the Canaanite city-states and undoubtedly would have precipitated similar if not identical reactions as those seen in the Amarna Letters against the *Hab/piru*. With this overview of Joffe's model, we now turn to the archaeological record of Ammon itself to see how the data there fit.

Settlement Archaeology of Early Ammon

LB I/B IIA Settlement Pattern: Nomadization

So far, archaeologists have been unable to isolate very many sites dating specifically to the LB I/B or the LB IIA in Ammon (Yammar 1993: Table 9). In some cases this may be because the ceramic forms that have been found happen to be those which run throughout

the Late Bronze period (see McGovern 1986). In other cases the necessary analysis of pottery has not yet been undertaken. Nevertheless, the quantity of LB IB/IIA material that has been recovered from Ammon is not very great. Indeed, it is *have not yet been* found any settlement sites, cities, towns, or villages that can actually be dated to either LB IB or IIA in Ammon, suggesting not only a decline of the already sparse sedentary occupation from LB IA (above), but a virtually complete non-sedentary occupation end of the settlement continuum not seen since the FB IV.

While there does not seem to be indication of any *settlements* in Ammon during the LB IB/IIA, there is evidence that people were doing in the area. This evidence comes in the form of a unique rectangular, almost square, site (see below) at Umm ad-Damir (McGovern 1989: 196–97; below), and three burial caves which were found in the nearby Baq'ah Valley (Jabal al-Hawayah Tomb A2 and Jabal al-Qasr, Tomb B3 and B40; McGovern 1986: 14–15).

For LB IIA proper, the data point an almost identical pattern (Table 9). There may be a LB IIA settlement at Sakh, southeast of 'Amman (Ibrahim 1992: 899), although no pottery has been published to enable a chronological precision concerning the duration of the settlement during the Late Bronze Age (LB II Age) pottery, dating broadly from the 13th to the 13th century, respectively to a LB IIA and LB IIB. It has also been reported (Tel Sakh) although no architectural remains have yet been isolated (Wimmer 1992: 896–97). Beyond this, evidence of LB IIA activity in Ammon is restricted to the "isolated sanctuaries" at Umm ad-Damir (north-west of 'Amman; McGovern 1989: 28–36), which continued in use from the previous period (the *Amman* *Amman* *Amman* east of 'Amman, which was added during this period, and the LB IIA burials at Sakh, Tomb C). The burial caves in the Baq'ah Valley (Jabal al-Hawayah A2 and Jabal al-Qasr, B3 and B40) also continued to be used during the LB IIA (McGovern 1986: 14–15).

LB IIB/Iron IA Settlement Pattern: From Sedentary to Nomadic

After an interlude of virtually no sedentary occupation in Ammon during the LB IB/IIA (above), the latter part of the LB IIB witnessed a dramatic resurgence of highland settlements in both Cis and Transjordan, including Ammon (see Erelstein 1994: 162, Fig. 8).

A review of the survey and excavation reports reveal that at least 20 sites in Ammon have been assigned to the LB II B/Iron I A strata (see Table 91 and 92). These include: 'Amman Citadel' (Bennett 1979a: 159), Tall al-'Umayri West (Yonker *et al.* 1993; Herr 1998 personal communication), Sahab Ibrahim (1992), Umm al-Dananiir (McGovern 1986), Tall Jawa (South; Yonker *et al.* 1990), Safut Wumman (1981, 1982b; 1992), Khirbat Othman Abu Dayyeh *et al.* 1991, 1993, Rujm al Henu (McGovern 1986), the Amman Airport Site (Dr. Horroby 1980a; Herr 1998), Al-Malrak Yasane (Dr. Walid 1993), Hadd Layn Kharraba (Gordon and Knauf 1987, 1993), Jabat al-Jawana (Gordon and Knauf 1987, 1993), Khirbat al-Ladunah (Gordon and Knauf 1987, 1993), Rujm al-Hana (Gordon and Knauf 1987, 1993), Rujm al-Badri (Abu Dayyeh *et al.* 1991, 1993), Khirbat Abu Dayyeh *et al.* 1991, 1993), Hesban Site 128 (Baeh 1987), Abu Zibneh (Gordon and Knauf 1987, 1993) as well as the King's Pool Reserve Survey sites 1 and 15 (Tel-Rohb Area C; Kerestes 1978: 108-35).

In addition to these sites, a number of cisterns and tombs have been excavated with links with the Late Bronze Age, including the Jabat al-Hawariya Burial Caves A1 and A2, the Jabat al-Qasbi Burial Caves B1, B2, B3, B9, B3a and Sakh al-Jab (McGovern 1986).

Site Size Distribution. The "settlement" sites range in size from "medium sized sites" to "very small sites" in our site size classification for Palestine (Gordon 1984). The size of the settlement sites are represented as follows (see Table 93): the 'Amman Citadel—100-125 dunams; 'Umayri—65 dunams; Sahab 50 dunams; Umm al-Dananiir—25 dunams; Jawa—21 dunams; Safut—17.3 dunams; Rehli—5.6 dunams; Khirbat Othman—uncertain. The cistern sites are all less than 5 dunams, in most cases less than 1 dunam.

Site size data show that the largest group of sites (15/11) in the very small to tiny range (<10 dunams) six sites are classified as small (<10 dunams), two sites are medium-sized (51-100 dunams) and one site is large (101-199 dunams). It must be emphasized, however, that in the case of the settlements, the size estimates are based on the approximate present size of the tell or the current extent of the ruins, rather than from excavation of the LB II/Iron I strata. Chances are that most of these size estimates should be revised slightly downward.

Site function. Of these 20 sites eight are probably *amman* settlements: the 'Amman Citadel, 'Umayri, Sahab, Umm ad-Danar, Jawa, Safut, Khirbat Othman and Rehil. Three sites consist of what has been described as the *quadratabau* or a "middle courtyard" structure: Rujm al Henû, the 'Amman Airport Structure, and Al-Mahrak Yassine (1986). Three more sites have been vaguely described as "hill-top forts": Jarad al-Jewari, Khirbat al-Istawa, and Rujm Madba'a (Gordan and Knauf 1987). The remaining seven sites are small, mostly prehistoric, scatters of building stones, the layout of which may have served as fortifications. Although a full study of the features associated with the buildings has not been published.

With regard to the "hill-top fortresses" and *quadratabau* structures, it is interesting to note that Fritz originally thought the 'Amman Airport Structure, whose *quadratabau* plan he clearly recognized was "clearly a 'valley watchtower' similar to the other 'towers' that dotted the landscape about the Iron Age" (Fritz 1971). While this suggestion is unlikely for the 'Amman Airport Structure whose contents seem to point to a cultic function, the *quadratabau* does have a "fortress-like" appearance and, in general, size and construction technique are not too different from the so-called "Ammonite Towers" of the Iron II. Similarly, M. Waseeb's subsequent work at Al-Mahrak, which also has a *quadratabau* plan, led him to see the site as a "fortified agricultural complex" (Waseeb 1992). This description was based on both the walls of the rectangular compound which were constructed of large masonry boulders, and the associated finds which pointed to agricultural activities on the site. Indeed, I would suggest that based on a region associated with a size similar to the Iron Age societies, the *quadratabau* is a LB IIB/Iron IA predecessor to the quite large fortified agricultural estates of the Iron Age, after the Iron IB-C (Younker 1999). This conclusion is more convincing when these structures are viewed with the historical context of LB IIB/Iron IA and compared with similar structures and a similar historical situation during the Ottoman period (Younker 1999a).

Historical Reconstructions

Egyptian Sources for LB IIB-IIA

How do the archaeological data fit with the available historical sources for Ammon? Fortunately, Egyptian sources, including the monumental

inscriptions of the various pharaohs of the 18th Dynasty and various texts such as the Amarna Letters provide a broad, albeit important, historical context for the sparse archaeological findings of LB IB IIA Asimon. According to these sources, a paramount concern of the Egyptians during the 18th Dynasty was to preserve Canaan as a buffer zone against the Hittites and other northern powers (Redford 1992: 148–49). Threats from the north—first, Mitanni, and then, Tunip and Kadesh—prompted Thutmose III to pursue a vigorous preemptive strategy to prevent enemies from threatening the borders of Egypt. This was accomplished in part by maintaining an overhanging hegemony over western Palestine during this interval, as the Egyptians were frequently called upon to defuse inter-city disputes and rural discord (Benkowsky 1980b; Knapp 1989b; Lemerche 1988: 83–84). To support this hegemony, the Egyptian pharaoh, through his emissaries and on-site administrators, required the rulers of the Palestinian city-states to send him, once a year, the annual tribute, but to also provision the local garrisons. They could troops, most consisting of local recruits of Egyptian campaigns, and to provide mounts for cavalry (see El-Labban 1973; C. Hopkins 1993: 201).

Not surprisingly, the heavy presence of Egypt in Canaan made significant impact on the local economy during the course of the Late Bronze Age. In some respects, Egyptian rule appears to have stimulated the Canaanite economy (Benkowsky 1980b; Knapp 1989b; 1993), though there is no evidence for the general population of Palestine benefited from this economic boom. Egyptian records report a substantial amount of tribute and gifts from Palestine, including tin, as well as woods, glass, and manufactured goods. However, none of these items were indigenous to Palestine, suggesting that their agricultural production was geared to trade for these items on the international market, for which they were sent on to Egypt. Thus, most of Palestine's economic surplus was converted to means of non-persistent wealth that could be used to support either palatial court or the Egyptian infrastructure in Palestine (Hopkins 1993: 201).

The diversion of this economic surplus away from the indigenous population had a predictably adverse effect on the countryside. In contrast to the Middle Bronze settlement pattern, Late Bronze Cisjordan did not attract even half of its former sedentary population in city towns and villages (Gonen 1984; Benkowsky 1989b; C. Hopkins 1993: 202). The highlands of western Palestine, which had boasted nearly 200 sites in the Middle Bronze, became almost devoid

of sedentary population during the Late Bronze (Finkelstein 1988: 339–340; 1995: 356 [Fig. 4]). As Bierkowski (1989b: 59) has noted, the sedentary population appears to have pretty much abandoned the rural hinterland and frontiers, and what was left was concentrated in the main urban sites that had carried over from the Middle Bronze Age.

At the same time, however, other Egyptian sources provide descriptions of non-sedentary elements of the population that appear to have occupied the highlands just out of the reach of Egyptian and local urban authorities. One of these elements, known as the *Shasu* (Semitic), appears in numerous references in Egyptian sources (Givón 1971; Ward 1972; Weippert 1974; Redford 1992). They are first mentioned in a list of prisoners from the 18th Dynasty (Documents II), although most references to them seem to date to the 18th Dynasty (the time of the earlier Amarna Letters) and 19th Dynasty.

Scholars differ on the derivation of the word *Shasu*. While some have suggested that it might be related to a Semitic verb “to plunder”, most scholars believe it more likely that *shasu* is derived from an Egyptian verb meaning “to wander” (Givón 1971: 26, 63; Ward 1972: 56–59; Weippert 1974: 433; Redford 1992: 27). The latter meaning certainly matches the Egyptian description of these people who “drift through their homeland.” *Shasu-land* (*ššw*), seems to be in Transjordan (Givón 1971: doc. 6a, and 6b; below: 150–151), but also appears in a number of other lands, including northern and southern Palestine, Syria, and even Egypt (Givón 1971: 25–59; Ward 1972; Redford 1992: 27). Moreover, Egyptian comments that the *Shasu* generally live in tents and keep sheep and goats are in harmony with the lifestyle of a nomadic or semi-nomadic people (Weippert 1974: 433–435).

Most scholars interpret the Egyptian sources as depicting the *Shasu* as a “social class” rather than an ethnic group (Ward 1992: 1166). According to Egyptian sources, the *Shasu* were divided into tribes or “clans” (*mhwt*) that were led not by a king, but by “chieftains” (Givón 1971: 255–57; Docs. II, 36). The fact that they are depicted in Egyptian art in different costumes (e.g., one class of *Shasu* kilt may reflect members of a different tribe) (Ward 1992: 1166). While most seemed to live in tents, some lived in towns (Givón 1971: 114–115; n. 5). Again, the texts suggest that *Shasu* kept cattle, sheep and goats, although some served as mercenaries for Asiatic and Egyptian armies (Givón 1971; Docs. 46–50).

Shasu in Ammon? Their ubiquitous appearance at points north (Syria

south Moab and Edom and west of Ammon (western Palestine) make it not unlikely that the Shasu were also found just near Ammon as well. Indeed, at Amara West a Kamesses II copy on list (apparently a derivation of a document of 1700 BC) may again provide a group of six names for the land of the Shasu, which clearly seem to be located in Edom, Moab and the northern Moabite plateau which bordered and it times was occupied with Ammon (Gray 1971: 203 and 40; Yonker 1994). One place name which occurs in this list, Laban, is the same name as the progenitor of the Ammonites and the Moabites mentioned in Gen 19, and may refer to a site just south of 'Amman (R. F. 1979: 2). Specifically both Abel 1938: 107 and Gray 1971: 6 note that the *Natsha Dignatiani* provides a list of Transjordanian garrisons from the Byzantine period, one of which is Laban. Abel, Gray and R. F. 1979: 2, identify the Late Bronze Age Levantine town of Laban and the Byzantine Laban, with Khabat al-Liban. Khabat al-Liban then may spell out Laban and Laban was formerly a Bedouin village and a station on the Hijaz railway located a little more than 1 km south of 'Amman and 1 km southeast of Jawa. See Abu'aher 1989: 94, 137-145, 2, a location which could be considered within the southern border of Ammon. Yonker and Daviau 1994; Yonker 1997. Unfortunately the excavations of the ruins of Khabat al-Liban as provided by Benbow and von Dornowowski 1964: 9-178 who visited the site sometime between 1890 and 1900. They note only that the ruins extended over a couple of hills. If this identification is valid, however, it places some Shasu close to the southern border of Ammon, just within Ammonite proper.

Certainly the lifestyle and social organization of the Shasu, as observed in Egyptian sources, is compatible with the archaeological record of Transjordan, which extends from Edom (southward) to Moab to Ammon (Laban) and Yonker 1990. If the initial lists of LB II A Ammon were not Shasu, they must have strongly associated them. As noted above, the archaeological evidence clearly indicates that Ammon at this time was mostly inhabited by non-sedentary people, although there is possible evidence of one or two modest settlements (McGovern 1989). Like the Shasu, there is some evidence of contact between Ammon and western Palestine in the similarity of some aspects of the material culture (especially some pottery forms and distinctive elements also appear *ibid*).

The occasional references that imply an aggressive relationship

between the Egyptians and the Shasu may provide some of the background for another Egyptian source that applies to the LB IB: the so-called "Palestinian List" or "topographic list" of Thutmose III. A full discussion of this list is beyond the scope of this study (see Aharoni 1979: 102–63, and Ahituv 1984 for earlier studies). However, 15 names (numbered as sites 89–103) are of special interest in that it has recently been proposed that these sites are located in Transjordan, rather than western Palestine (Redford 1982a, 1984; Kitchen 1992: 24–27). According to Redford's identifications, sites 92–106 are actually located within Ammon. Site 92 is 'Abil Nahr az-Zaraq/Jahbok. Site 93 is *htl*, (Gittith [winepresses]); site 94 *mqrpt* (fertile depression – Beq'at Vadiya? See also in Ash Masek 'Ammonite' and site 103 *gmmt* [Mt. Kerammim/Jawa? see Yonker 1997: 10]. One possible significance is the fact that the reference points for this stretch through Ammon are *geographic* features rather than settlements (Yonker 1997). It could be inferred from this Egyptian document that settlements in LB IB Ammon were either rare, avoided by the Egyptians, or both (see section on population distribution above).

Again, this situation is in harmony with the broader socio-political context of Palestine. As noted above, the commencement of the LB IB period is associated with Thutmose III's campaign into Palestine c. 1482 B.C.E. (Weinstein 1981: 1; Redford 1992: 136). The focus of this campaign was western Palestine, although the description that we would like to have relates far rather details to the life, production, economy and/or subsistence strategies of those people who lived in the marginal zones of Transjordan such as Ammon. However, as also noted above, the existence of a Thutmose III papyrus that possibly relates Ammon proper (Redford 1982a, 1982b; Kitchen 1992) leaves open the possibility that the pharaoh's campaign moved north through this region at least once if not more times on his way north. The discovery at Tall al-Umayri of a seal impression with the cartouche of Thutmose III (albeit, a 19th dynasty copy from the reign of Ramesses IV – see Redford 1992: 314–15) is a possible testimony to the enduring impact that Thutmose III's passage made on this area. Subsequent to the campaign, the Egyptians instituted a policy that included the intentional removal of Canaanite towns and the exportation of a sizable segment of the population" (Redford 1992: 208).

There has been something of a debate on the impact this Egyptian campaign had on the population of western Palestine. Many scholars

arts have assumed this campaign created an occupational gap in some regions of Palestine (e.g. Wright 1961: 91–4) while others have thought this gap has been exaggerated and even filled by subsequent archaeological discoveries and Egyptian texts (e.g. Weinstein 1981: 12–14). Recent intensive surveys show, however, that in terms of sedentary occupation there was indeed a significant drop, especially in the highlands of Canaan during LB IB (Finkelstein 1994: 174; 1995: 134; Balmori 1994: 193; 1995: 33).

While the data are not yet complete enough to indicate whether the few LB IA settlements at 'Ammar, Unaiya and Juv were abandoned or destroyed at the LB IA/IB transition, there is some reason to think sedentary life in Ammon was in decline at a time the Egyptians were campaigning in western Palestine. Certainly, the practical mass deportations did not encourage sedentary occupation by the highland inhabitants of the Canaanite Ammon. Egyptian documents confirm that Thutmose III deported more than 500 people from this general region, while his son Amenophis/Amenhotep II would carry off an additional 89,000 (Givon 1972: 29–20; Redford 1982b: 117, 1985: 193 and below). It is interesting to note that the Shasu made up about 36 percent of the Palestinian prisoners brought back by Amenhotep II. As Redford points out, although the figures only should not be construed as a census list, it undoubtedly provides a concrete example of the Shasu population that penetrated Canaan (1992: 276).

Most of those folks in Ammon and elsewhere in Transjordan who escaped Egyptian deportation apparently decided to abandon a sedentary way of life but one which would not be as subject to Egyptian harassment. They adopted a strategy of "nomadization" (Joffe 1983: 61 or "nomadization" which is one "form of resistance" by the rural population to the exploitative undertakings of elites) (Labrecque 1990: 17–18; see also Hopkins 1993: 3). The nature of their emigration to the Transjordan placed the Levantine people, as the Hab/piru, to maintain an existence "at least one step beyond the reach of the Egyptian empire and its royal policies" (Hopkins 1993: 60; see also Redford 1992: 2–3). In spite of the massive deportations of Thutmose III and Amenhotep II, later Egyptian sources indicate that a large population of Shasu and Hab/piru continued to occupy the highlands of Palestine and Transjordan during this period.

The presence in the nearby highlands of these peoples who refused to acknowledge the authority of the Egyptians or to share in the heavy burden imposed upon the city-state neighbors would inevitably have created an irritating and frustrating situation for both the Egyptian authorities and the Canaanite urban leaders. Not surprisingly, therefore, one reads disparaging remarks about both these people groups—Hab/piru and Shasu—in both Canaanite correspondence and Egyptian records. From the Egyptian perspective, the Shasu were, for the most part, rebellious and dishonest nomads who were “in violation of the laws of the palace” (Ward 1992). The demands that Egypt placed upon the city-states of western Palestine became increasingly burdensome in an environment of diminishing sedentary populations (Bunnovitz 1995: 325). In a declining world, labor power was at a premium in order to meet agricultural production needs, tribute service, and other demands. It is not surprising that urban leaders became quite jealous of both nomadic ways and nomads (Bunnovitz 1995: 325).

As Bunnovitz (1995: 326–27) explains:

in order to maintain role and status, great material investments were required by the urban elites . . . and thus the burden imposed on the subjects became heavier. These subjects, in turn, reacted time and again by deserting the established social system, thereby depleting it.

Eventually, the desertion of sedentary populations coupled with the compulsory need to share its meager labor resources with the Egyptian government (see Na'aman 1984: 204) presented a serious problem for the Canaanite urban centers and generated a vicious cycle in which even greater demands were placed upon the remaining sedentary population, increasing their rebellion, but they were unable to reform the system.

Many scholars believe that a good number of these people apparently joined the seminomadic or nomadic groups such as the Shasu and Hab/piru who occupied the highlands of both Cis- and Transjordan (e.g., Stager 1995: 348). The latter region, which was more removed, especially served as a refuge from both the Egyptians and the city-state neighbors of Canaan. The marginalizing of a semi-sedentary or non-sedentary way of life by the Shasu in Transjordan undoubtedly frustrated the ability of the Egyptians to control these peoples as they could the city-states of Canaan.

Historical Factors and Reconstructions of LB IIB/Iron IA

Hab/piru and Shasu Dominance in the Highlands. Although they were eventually displaced by the arrival of the Sea Peoples mentioned in Egyptian sources, the Shasu of Transjordan (including the region of Ammon) and related non-sedentary peoples such as the Hab/piru in western Palestine continued to dominate the hill country of the LB IIB/Iron Age IA in both Cis- and Transjordan (Weinstein 1986: 17; Redford 1992: 257–80). Indeed, there is sufficient evidence to suggest that the Shasu had become so powerful during the period c. 1200–1150 B.C. that they were able to bring an end to all Egyptian trade routes through western Palestine and Transjordan for some time (Hawass 1980). Significant punitive expeditions by both Ramesses II (Redford 1992: 234–27) and his son Merneptah. The presence of Shasu captives in the Karnak reliefs depicting this campaign reinforce the idea that troubles with Shasu required prompt Merneptah's campaign. I disagree with Redford here that the battle reliefs at Karnak of Ashkelon are those of Ramesses II; rather, I agree with Yurco (1990) that they belong to Merneptah.

Merneptah's success in Canaan and Transjordan, however, was short-lived, for after his death he was followed by four weak rulers who essentially abandoned Canaan for the next 20–25 years (Redford 1992: 249; Stager 1995: 335–36). During this time, the Canaanite city-states were now quite at the mercy of the highland tribes – both Shasu and Hab/piru. As Redford (1992: 268) points out, the "Apiru and other nomadic discontents . . . held the upper hand in the Canaanite highland . . . they were mighty warriors . . . and as time went on they were sufficient to conquer and destroy cities . . . (EA 163:47–48, 50). This would have been especially true during the more than two decade Egyptian decline that followed the reign of Merneptah (c. 1203–1182 B.C. E.) (Redford 1992: 249).

Resettlement of Hab/piru and Shasu Element in the Highlands. In my opinion, it was most likely during this 20-plus year hiatus (c. 1203–1182 B.C. E.) that Egyptian colonization in Canaan (as followed Merneptah's reign) that the LB IIB/Iron IA highland settlements in both Cis- and Transjordan (including Ammon) began to be established. This is a time period that harmonizes closely with the ceramic chronology of these sites (see Stager 1995). The diminished threat of corvée and taxes during the post-Merneptah period, combined with pressures in the highlands for pastoral resources (see Kohler-Rodolfson 1992: 15

would have provided ample motivation for these components of the Hapiru and Shasu who had previously been sedentary (see above) to reestablish small agricultural villages in the highlands as quickly as it was feasible. While Redford notes that the Egyptians were probably militarily stronger than the Canaanite city-states, it appears that they, nevertheless, chose to avoid pushing into the lowlands during their annual settlement phase. This reluctance was probably not caused by a fear of the weakened Canaanite dynasties as much as the increasing possibility that the Egyptians might enter in which they were already engaged (the reign of Ramesses III, 1182–1151 BCE). It is during the latter period when the Philistines invade (Stager 1990, and below).

As noted, this LB III/Iron I highland settlement process occurs at the same time in the hill country of both western Palestine and northern Transjordan (including Ammon) (1200–1000 BCE). Several factors, such as the Transjordanian settlements, have followed this later, probably due to demographic and environmental factors (see LaBina and Younger 1967: 306–7; Finkelstein 1995: 354, 357).

This situation is constructed in many ways of the questions raised by Bunimovitz (1994) about the nature of the Iron I highland settlement phase and the associated societal collapse that occurred. Several factors appear to have contributed to the end of the Late Bronze Age (see articles in Waelchli and Jankowsky 1995: 302, especially Weiss 1994: 32–33; Dever 1992: 10–11). Significantly, Bunimovitz notes that the renewed settlement process in the hill country of both Cis and Transjordan applies to two regions in which the majority of the Canaanite centers were still in existence (1994: 195–196 above). Bunimovitz asks the question: 'Is it now scholars assume, the collapse of the Canaanite socio-political and settlement systems led to *nomadization* at the end of the Middle Bronze Age (see Finkelstein 1988: 1994: 199)? Bunimovitz (1994) would this same process at the end of the Late Bronze Age lead to *sedentarization*?'.

Instead, Bunimovitz argues that the Late Bronze/Iron I *sedentarization* in the highlands was the result of increased security provided by the Egyptian authorities 'as a consequence of the vigorous measures taken by the pharaohs of these dynasties (including punitive expeditions against nomadic groups) ... [and] security was restored, the frontier retreated and non-sedentary groups resumed their highlands' (1994: 3–8).

However, there are a number of problems with Bunimovitz's recon-

situation. First of all, there is a bit of a paradox, or even outright contradiction, with the fact that the very people against whom punitive expeditions are undertaken by the Egyptians – the non-sedentary groups of the region – would subsequently become secure as a result of Egypt's punitive raids and would consequently settle down. Moreover, there is the record of Merneptah attacking one of these groups, Israel (Hase 1971, yet Berman 1972 records Izre, Sath and Lul Bet Merim B¹ among the sites which enjoyed the new security provided by Egyptian rule which acknowledges that the Israelites (Hase 1971: 303) in these upland areas probably suffered a defeat at the hands of the Egyptians. It seems more likely that they would have withdrawn even further into Egyptian territory; they would not have settled down to become subjected to increased taxes and control.

I would propose a reconstruction that correlates the historical analyses of Stager (1973) with the archaeological model proposed by Hase. The highlanders were probably food-kn based semi-nomadic groups who came under increasing pressure. Their ideology was based on the oppression of Egypt and the Canaanite cities (Stager 1973) through a process of assimilation (Gibson 1969: 193). Egypt had been the only case through assimilation (Gibson 1969: 193) and who take advantage of the first opportunity to rise to when the semi-nomadic groups are weakened and no longer as effective. The real time of this assimilation would have occurred during a period in which the Egyptians began to withdraw from Canaan during the 20th year Egyptian (the year that I found the reign of Merneptah is described above). It is during this same time that the Philistines occupy the southern coast of Palestine and give rise to a half of themselves (Stager 1973: 193) Ammon, which was not distant from the Egyptian and Canaanite city state. Owing to the west Egyptian already begun settling a little earlier, the groups west of the Jordan. Indeed, recent work by Ussishkin suggests that the Iron IA site was indeed settled and that it can serve as the west based on the ceramic assemblage which includes the earliest Iron IA forms (i.e. a higher percentage of Late Bronze forms than is typical), smaller sizes in the west. It is perhaps a confirmation. Whether this has anything to do with the Israelite understanding that the Ammonites settled in the region first (e.g. Gen 10:16; Num 21:24; Deut 2:19) is hard to say, especially since these texts are viewed by most scholars as late.

Iron IIA Settlement in the Highlands of Ammon and Transjordan

Throughout the subsequent Iron IIA-B period, the settlements in both Ammon and western Palestine continued to grow in size and number. In Ammon proper, at least 31 sites have been dated to this period: 2 settlements and 42 farmsteads (Table 9.3). Egyptian sources indicate that the Syrians continued to inhabit Transjordan, although they were involved more specifically with the lands of Moab and Edom. From the reign of Ramesses III (1182-1151 B.C.) there is a passage, between his accounts of his conflicts with the Sea Peoples and the Libyans, that reads:

I have overcome the Seamen, the enemies of the Shu, and I have fought with the enemy proper of the country, and their livestock likewise, without limit... Kitchen 1997: 10.

In spite of Ramesses III's victory over the Shasu of Seir in Edom, there is presently no evidence apart from the "Egyptianizing aspects" of the Balu' Stela, which is clearly not Egyptian, Dornemann 1983.

There is no evidence of any Egyptian presence or influence in Ammon or Transjordan during this time. Indeed, Ramesses III's attention was probably not taken up with defeating the Philistines who were their main southern enemy (Stager 1995: 11).

An ongoing question is the relationship between the Shasu and Hab/piru type peoples who apparently occupied the highlands of Ammon during the Late Bronze Age and the Ammonites who lived in this same region during the Iron Age. From a purely archaeological perspective, there is no discernible break to indicate the arrival of a "new" people. Rather, one sees only evidence of occupational continuity, although there is a distinct gradual movement towards more sedentary, settled and intensive agriculture from Late Bronze to Iron Age. The cultural antecedents of the Iron Age Ammonites seem to clearly be the highland past of the Late Bronze Age Shasu or Hab/piru type peoples. The precise manner in which these people became Ammonites, apart from the cultural perspective, is presently beyond our purview.

Iron I Historical Reconstruction for Ammon and other Highlands

There are no references to Ammon in Egyptian sources during the Iron IA, although they do note that other Transjordanian peoples or

the north coast of the Sea of Galilee by the Shasu. Rather the Levantines were distracted by bigger problems in western Palestine where their ongoing fighting centre over the coastal cities was threatened by the Sea Peoples during the eighteenth century of Ramesses III. While the Egyptians were able to contain the invasion during the time of Ramesses III (Stager 1995: 344), they eventually lost their grip on Canaan during the second half of the eighteenth century BC. This resulted in the decline of the Canaanite urban enclaves as well.

As the threat from Egyptian and Canaanite urban centres disappeared, the Philistines increasingly posed a new challenge to the highland peoples of the region. While it is primarily difficult to see living in the west of Israel as causing a change in situation that eventually affected Ammon. However, this new situation provided a new context for the Ammonite community that was also a challenge. Rather than existing in an isolated strategy by being isolated, as they had previously done when oppressed by Egypt and the Canaanite city states, the kin-based peoples now now exist. There are possibly two reasons for this new state. First, the Philistines probably represented the threat to the highland peoples that Egypt had when the latter was at the height of power in Canaan. Second, the kin-based highlands had both grown and developed traditions that now made them a potent force in their own right also, for the first time the kin-based peoples had developed a significant society independent of the old Canaanite city states which had now become virtually powerless. The ability to form large institutions based on kinship ties (tribal confederations) along with large land settlements which provided an economic foundation for independence and rely forms for resistance enabled these people to effectively resist Philistine incursions and the impact of domination for some time (see Halbutson's excursus chapter 1). However, according to Israelite tradition, mounting pressure from the Philistines in the west and the Ammonites by the east motivated the Israelite tribes to unite under centralized leadership. Thus, they made Saul a king. Under Saul and then David the Israelites were finally able to break and subdue the Philistine threat.

In Ammonite meanwhile, the people had apparently also coalesced under central leadership – a king,⁷ if Israelite tradition is to be read upon Judges 11. If true, this tradition suggests that Ammon acquired a king prior to Israel. While there are no contemporary documents to present the Ammonite point of view, current settlement data – especially

not. Ummayn do seem to support the idea that Ammon underwent secularization just prior to Cisjordan, contrary to previous views. This makes sense in view of the fact that Ammon was a bit more removed from the pressures of Egypt and the Canaanite city-states and, like the Philistines, and may have begun settling down just prior to the post-Merneptah hiatus when highland settlements in the west were established in earnest. The growth and increasing competition for land from western Israelite tribes pushing into Transjordan probably precipitated a reaction in Ammon similar to that evoked from Israel in the west when the latter were pressured into the Philistines a little later. The Ammonites banded up their coalition and united under a king in order to resist the Israelites. Attacks from the Philistines against Israel in the west may have prompted the Ammonites to make provisions of their own egrets. In addition, the fact that Ammon sustains a pattern of continuing sedentary growth and developing settlement by the 13th century suggests the emergence of a large central urban center at Rahmani Ammon supported by several smaller size centers (e.g. Sa'ad, Ummayn, Salihah, Jawa) and various smaller villages and farmsteads.

Whatever the historical particulars, the Iron I A B highlanders of both western Palestine and Ammon appear to demonstrate the process of generative genealogy, where large non-kin-based kinship groups coalesced into general confederations from kingdoms and vassal city-states, then small-scale secondary ones. As Lippey (1996) observes, pointing out one of the main variables that can precipitate centralized tribal leadership on a larger regional basis is the activity of an external supertribal entity or state. In the case of Late Bronze Canaan, both Cisjordan and Transjordan, that external stimulus was provided by the Egyptian state. What is unique in this case is that for the first time, the history of Canaan, the 'city-state', does not regenerate or come to resolution with the kin-based elements, to use Joffe's terms. Instead, the local kinship groups transformed into larger and more complex kinship units, tribal confederations, confederations and eventually kingdoms or 'states' which come to form the landscape. Ultimately, Canaan's old city-state system disappears never to re-emerge again!

In brief, the transition into the Iron Age was a social/organizational revolution that reversed the historic trend in Canaan dating back to the Early Bronze wherein city-states represented the apex of

social evolutionary complexity—an apex that dominated the small rural kinship groups. Rather than another phase of "resolution," the Iron Age represents a new social evolutionary trajectory in which Canaan's old urban order is permanently disrupted and the kin-based elements evolve into new sort of social organizational complexity that leave them on top. In the form of the Iron Age kingdoms of Ammon, Moab, Edom, and Israel this new trajectory will reach the highest level of social complexity the region had ever seen up to that time and which would not be seen again on a local level until the present.

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CHAPTER TEN

THE AMMONITES IN THE LATE IRON AGE AND PERSIAN PERIOD

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Introduction

Based on a Mark 5:14 but also on his biblical assumptions, Nelson Glueck suggested that the Ammonites ceased to exist at the same time that the Babylonians destroyed Jerusalem in the early sixth century B.C. So little was known about the Ammonites and the archaeology of Transjordan in Glueck's day that the much better known results from Cisjordan became the historical paradigm for the lands east of the Jordan River, as well as the region the Ammonites had claimed to belong to in biblical geography. As it turns out, Glueck's assumption was little less than unfounded. More recently, as we have seen, during excavations at Hisban and 'Umayr the story is very different. This paper will first consider the material culture of the Ammonites and then use the pottery from Hisban and 'Umayr to help us understand the Ammonites during the Babylonian and Persian periods.

Ammonite Material Culture and Identity at the End of Iron II

The following discussion utilizes the remains from the main sites excavated in the Ammonite region:

Dayr 'Ada VI	houses
Hapar, Kh.	circular tower
Hisban 16	wall fragments ² , reservoir
Iraq al-'Arabi	cup-shaped pottery
Jalul	houses
Jawa	cassette ² , wall, houses

Mazar	tombs
Nimrin	pottery; wall fragments
Mount Nebo	Tomb
'Anman	palace?; wall fragments, tombs
Rujm al-Maduf (N)	circular tower
Rujm al-Maduf (S)	circular tower
Rujm al-Hanu	fortress
Safat	houses
Sahab	wall fragments
Sa'dhiyya IV	pits
Lower Sites	fortresses, agricultural sites
'Ullava	administrative buildings; houses; monumental city
Linn ad-Dananir	cobbled courtyard

Geographical Extent. The end of Iron II was the era of greatest prosperity for Ammon, but, until the summer of 1996, there was conflicting information about its southern border. All we knew for certain was that it was somewhere between 'Anman and Dhik. Using the archaeological finds from Heshbon, which appeared to be Ammonite, maximalists asserted the border was perhaps between Madaba in the south and Heshbon in the north (Holl 1992). Maximalists basing their arguments on biblical texts, suggested that the biblical period (from Isaiah c. 700 B.C. and Jeremiah c. 600 B.C.) placed Heshbon as situated by most researchers is modern Hisham, putting the Ammonites to a very small territory surrounding modern 'Anman (Hubner 1992). However, the biblical texts may in fact stand in two different ways. The first one is a post-literary re-precoding of earlier texts. Only one biblical text, Isa. 16:9, places Heshbon clearly in Moab. The others place it: (1) clearly in Ammon (Jer 48:2, 2 clearly near Moab (Jer 48:2, 13) or 3) maybe not in Moab (Isa. 16:4, 10; Jer 49:31). Jer 49:34 quotes part of Isa. 16, making Jeremiah dependent on Isaiah. The one text which clearly places Heshbon in Moab (Isa. 16:9) also uses formulae based on Isa. 15-16. This central text, Isa. 15:1, is the literary key to the problem for it alludes to the Song of Heshbon in Num 21:21-30 that may have been an early taunt song against Moab and does not claim Moab controlled Heshbon (Hansen 1993). Thus, it would seem that Isaiah and Jeremiah were more interested in recasting their prophetic oracles about Heshbon in Israelite religious literary or oral tradition like the Song of Heshbon than in the geopolitical realities of the day.

The second solution is to see Heshbon in Moab during the time of First Isaiah and in Ammon during Jeremiah's day (Vanderstede 1989: 9; Younger 1994). This is possible, but archaeological evidence also seems to suggest more of a connection with ancient Amman than areas to the south, though the remains from the middle Iron II are so poorly at present that the archaeological picture is not clear. The view of some that the Song of Heshbon was a later literary work than First Isaiah or even Jeremiah would agree with this scenario.

Archaeological finds at Heshbon 16 in Iron IIC (the seventh to fifth centuries B.C.), including pottery, writing style and a large number of ostracons, figurines and other finds all suggest that the site was Ammonite, not Moabite. During the summer of 1996 excavations by the Madaba Plains Project at Jeshel east of Madaba and excavations and surveys by the Wadi ath-Thamad Project south of Jeshel have shown a clear border. Two inscriptions, one seal and one ostracon from Jalul were written in Ammonite writing and contained Ammonite names (personal observation thanks to Robert Younger). These inscriptions go along with the Ammonite pottery and figurines also found there. However, about 14 km to the south at Khirbat al-Mudayna in the Wadi ath-Thamad, an ostrakon with clear Moabite writing and a name probably containing the name of the Moabite god Kemosh was discovered (personal observation thanks to P. M. M. Daviau). Accompanying this inscription was a corpus of pottery completely unlike that found in Ammonite regions but with strong parallels at Dhiban in Moab. I suggest that the border can be placed at the northern limit of Wadi Warr, a range of which the Wadi ath-Thamad is a tributary, because Ammonite pottery was found at Khirbat al-Hari, a fortress on the northern rim of a deep wadi approximately 11 km south of Jalul and 3.5 km north of Mudayna (personal observation thanks to Andrew Dearnan). The conclusion that Khirbat al-Hari and Jalul, on the one hand, and Mudayna on the other were contemporary is based on identical Ammonite pottery forms found in great numbers at Jalul and Khirbat al-Hari but also (in much lower frequencies) at Mudayna. Jalul and Hari were virtually bereft of pottery forms similar to Mudayna. However, Iron IIC pottery from the new excavations at Madaba displays strong elements of both Ammonite and Moabite forms (personal observation thanks to E. L. Harrison). The excavations at Madaba may show us that the border came to the north in this region.

Because of Ammon's relative prosperity below its increased border to the south and the absence of the destroyed site of North Israel, we may possibly also include sites such as Tell el 'A' a VI, Ma'ar Nimrin, Dornemann 1990: 158-59, and Samayra IV in the Jordan Valley east of the river as Ammonite, though their material culture was not as homogeneous as sites on the plateau. The northern border of Ammon may also have extended beyond the Wadi az-Zarqa (Jabbok/Jabbok River) to include the settlements in southern Gilead in the absence of strong Ammonian and Israelite states, the earlier rivals for Gilead. The desert was a natural boundary on the east. Herr 1992b.

Settlement Patterns. The settlement pattern of Ammon was centered on its capital and center site, 'Amman (biblical Rabbat-Ammon), where, unfortunately, the major archaeological excavations have taken place. The several small projects that have dug there have not cleared enough area to plan Agis streets or published enough information to provide a coherent picture. However, the imposing site itself, overlooking the fertile lowlands of the Zarqa River, is enough to emphasize its strategic importance. It signified city fortifications, building walls, and collections of material culture, including the pottery, that a Trans-Jordan capital could speak of a thriving royal city. Surrounding the capital were smaller towns, such as Samayra (to the north), Jwari, Samayra, and 'A' a VI (to the south), and the fortified villages of the lowland Trans-Jordan. Villages or agricultural sites were also in the highlands, such as the steeps of Harat-Ris (to the highlands north of Amman), Radd Samayra, two Khirbat al-Hajjars, etc. (Younker 1991). Some of these earlier sites were fortresses (Khirbat-Hamir, Dabasa, Rujm al-Malfuf [N], Rujm al-Malfuf [S], one of the Khirbat al-Hajjars, and a major one at Khirbat al-Hamir; Kletter 1991); that is, they were situated in strategic locations, were somewhat larger than the agricultural sites, and had no associated agricultural installations (for example, no winepresses). The fortresses could be either round towers with associated installations or rectangular fortified structures. Ammon was thus a large city-state with its major capital city surrounded by scattered towns, fortresses, and rural farmsteads. Exactly how farther-flung towns like Hishban, Jahul, and perhaps Madaba related to the capital has yet to be determined.

Subsistence Patterns. Rainfall in the Transjordanian highlands is sufficient for dry farming. Grain was produced in the valleys and plains while fruits and vegetables grew on the hillsides and flocks grazed

in the open spaces between fields and on the eastern steppe bordering the desert. This agriculture helped Ammon achieve its prosperous subsistence level. Central state sponsorship of aspects of this agricultural production must have helped it grow.

Urban Plans. No Ammonite site has been excavated extensively enough to gain a clear picture of an urban plan. The best glimpse is 'Umayn, but it was not a normal residential site and was founded very late in the period (Herr 1992a). It included administrative buildings in the southwestern quarter of the site with domestic dwellings housing the employees of the north and east. There was a city wall, but a monumental entrance structure with a small shrine standing on a platform and basin were facing the valley where the King's Highway from Ekron passed. Better sites have been found. Jawa was a fortified residential site with houses inside a casemate wall but here, also, nothing can be said about street plans.

Architecture. The plan of the Ammonite fortresses is seen such as Rajm al-Henu in the Baq'ah Valley. There were both circular and rectangular towers and a casemate system of rooms around a courtyard. A similar pattern but without the circular tower was excavated at Dajra which however is a Hellenistic working farm of the Hellenistic period. A similar history (including Roman occupation) requires the study of the Iron II fortresses of Le Mith and Hajar towers.

Part of the palace of the Ammonite kings, or at least a major administrative building, may have been found on the 'Amman Citadel in the east-central part of the site by a French-Jordanian team (Zayadeh, Hurwitt and Najjar 1989, 1992). Certainly the building was an important one with very large walls surrounding a courtyard paved with a high-quality plaster floor. The rich finds and their interpretation (four ivory mask, Phoenician vases, a green glass goblet, apsis lazuli fragments, and perhaps four double-faced Hathor heads) suggest a palatial interpretation. The administrative buildings at 'Umayn have very thick walls up to 2 m thick and were open to the sky. The basements are built in Palestinian construction. One of the 'Umayn buildings was constructed in a large lion room house plan similar to residential. The headroom at the back however was considerably wider. Although most likely built earlier, a separate building at Jawa (Yonke personal communication) perhaps used for working and trade functions, since one found at Umayn or Jar.

City walls included casemate structures at Jawa and the fortress

of Rujm a-Henn. Solid walls may have been found at 'Amman which also possibly included a circular tower. A city gate was discovered at Jawa, but its plan has not yet been published.

A house at 'Umayri, only partially excavated, may also have had a four-room plan with a cobbled long room and a cobbled broad-room. But the form is otherwise rare in Ammon. Indeed, there does not seem to be a typical Ammonite house plan. One of the houses at Jawa contained two stairways and m-nobling pillars separating some of the rooms (Day 1990). Other house fragments have been found at Dayr 'Ala M-Jahl, Samir and Sahay. Several houses have over the interworked rooms. It is possible that these are basements supporting a more coherent plan in the upper story.

Technology. Ammonite pottery was at its most distinctive and superior phase in Iron IIC as potting technologies improved, most likely with some Assyrian inspiration. Very few of the typical vessels found in Ammon have been discovered outside the region (Laignelot and Sauer 1972). Several excavations of the Ammonite plateau have produced a great amount of Ammonite pottery in the last two decades, including Hsiao, Rujm a-Henn, 'Umayri, Jawa and Jari. Jordan Valley sites have it too, but not in the same proportions. Several types of bowls were made of fine ware, probably used by the elite with the proper. These include elegant shallow bowls, a few decorated with the much later Nabatean ware lotus design. There were also decoratively burnished bowls, some with a gray burnish made with a muller (see text) but the most distinctive development occurred with a variety of burnished black bowls called "trigly enough" black-burnished ware.

Most masonry styles use rough-hewn stones. Ashlar masonry is rare outside 'Amman. Even the administrative complex at 'Umayri had no well worked stones. One wall at Jawa is very similar to Phoenician walls built in the *opus* and quoin construction style ("pillars" or nicely-hewn stones alternating with sections of smaller, rough-hewn stones).

Trade. The imported items found in the possible palace on the Amman Citadel as well as an Ammonite black-burnished bowl from Batash in Judah indicate active trade patterns for Ammon (Kohn and Mazar 1987, Fig. 11.1). There was a major north-south road or Transjordan traditionally called the "King's Highway" (Num 20:17-21:15) and at least two other roads must have crossed the Jordan Valley from Amman to Jerusalem and the Samaria region. Trade

on the King's Highway is represented in the lists of goods on the Hisban ostraca (soon to be published in full in a book of collected essays by E. M. Cross, an earlier list see 1975a and 1975). The sites in the Jordan Valley may have seen more trade items than those on the plateau, except for Amman. The tombs at Mazra'a illustrate this with their Assyrian, Judean and Phoenician vessels (Yassier 1984). There are also indications from sites on the plateau of trade with Phoenicia; artistic motifs suggest Phoenician themes (Beaumont 1975), pottery from tombs in 'Amman (Gar 1991: 90-5), and a seal written in Ammonite script mentioning Astarte of Sidon (below). The lentil-shaped body of a New Year Flask from Egypt, made of a greenish-tan ceramic fabric, was found in a storage cave near an agricultural site in the 'Umayn region (Herr 1991: 212, illustrated in Fig. 2.231). These vessels were traded all over the Mediterranean during the Saite 26th dynasty (seventh-sixth centuries B.C.) (Homès-Fredericq 1992: 136).

During Ammonite times developed their own distinctive writing system after borrowing the Aramaic script at the beginning of Iron IIb (Cross 1975; Herr 1980). Their found scripts are characterized by pictorial styles, the heads of some letters spread very late in the seventh century, following an Aramaic development that began a century earlier. The most important inscription of the period is the Smea Bottle, found at a site seen on the campus of the University of Jordan. This small bronze bottle contains eight lines of Ammonite writing dated to around 600 B.C. and mentions at least three kings of Ammon (Thompson and Zayadine 1973; Cross 1975b). There are also scores of seals with several found *in situ* at 'Umayn and one of an agricultural farmsteads. The most famous one is the seal impression on a clay tablet of an Ammonite king named Ba'al-yashar (Biblical Baal in Jer. 49:11) who reigned in the early sixth century B.C. (Herr 1980). There were also several ostraca found in the fill of the Hisban reservoir several of them representing records of trade items. Like most of the other small pieces of the site there, however, the Ammonite script gave way to Aramaic in the middle of the sixth century. Some of the late Hisban ostraca, though in Aramaic script, are still in the Ammonite language (Cross 1975).

The Ammonite language belonged to the "Canaanite" family of Northwest Semitic, but contained what appears to be an element of Arabic, especially in names, perhaps because of Ammon's proximity to the eastern desert. Ammonite differs from neighboring Hebrew

and Mesopotamian, but not insignificant ways. Unfortunately, few Ammanite Ammonites are large enough to determine how many of these differences existed. Jackson 1963: 108. One difference seems to have been a different preoccupation of subjects. Hengst 1966.

Religion. The religion of Ammon centered around its god Mulkam, who may be depicted by several iconographies and motifs. Bankowski 1991: 40–41, as well as a figure from Jazir Daxil and Diet 1991, though they suggest it is El wearing the *ouf* crown. Some of the statues may in fact be in date from IIA–B. However, El is a chief deity of the southern Levant. Mulkam was probably a deity of El's city, whose name is in almost every Ammonite place name, and whose iconography symbol of a bull with huge horns is a feature in Ammonite seals. Atriche 1989. That Astarte was also worshipped by Ammonites is suggested by a seal written in Aramaic script that reads 'Astarte of Sidon'. Nor also is it a male statue from Ammonite proveniences. Bankowski 1991: 42. El, Mulkam, and Astarte/Asherat were probably considered as divine consorts, although Astarte is not necessarily to be equated with Astarte of Sidon. MacDonald, personal communication. Ammonite temples have been found, but small shrines or cultic centers were located at Umayyad's edling stone with a basin at its entrance to the site. There are perhaps in the important place of Amman.

In El's perhaps less evidence of larger monumental art toward the end of the Ammonite monarchy than in IIA, though some of the statues discussed above may have come from IIA, as well. Terra cotta figurines and animal figurines are now extremely rare. Frequent goddess figurines, some with eyes bigger than the cases made by pushing the clay, between human forefinger are the most frequent human types, while horses with riders, bovines, and lions are the most frequent animals depicted. Whether these always represent holy objects or can also be toys is presently unclear. Some use proven iconographic scenes. One example from Umayyad, though it is extremely small, is so nicely carved we can suggest that the species of bird on the seal was an orange ruffed seabird, a seal recorded long and still seen today. Herr 1962: 100. The seal impression of the official of Ba'alvasna⁴ contained the depiction of a winged scarab beetle, probably a royal symbol as it was in Judaea, the *mlk* jars. Yonker 1985. The frequent depiction of bulls on Ammonite seals has already been mentioned.

Burials. The tombs from the Amman region were chambers in

nity bedrock cliffs much like those from the Jerusalem area. They contained objects including pottery and figurines. A very large cemetery in the Jordan Valley at Maza, which was made up mostly of pit graves, produced a cornucopia of finds, including pottery, glass, stone and metal vessels, bronze weapons, jewelry, beads, seals, and bone and shell objects (Yassine 1984). Though later in date, the spectacular tomb at Umm Udhayir, Amman, included a bronze caryatid censer (Bienkowski 1991: 96).

Water Systems. The reservoir at Hisban, though apparently constructed earlier (Sauer 1994: 241–42), probably continued through this period. Measuring 7 m deep, it was 10 m long at the east side and based on the top lines of the covers in the debris along the reservoir it was about the same measurement in the other dimensions. It could thus hold approximately 2000 cubic meters of water. The location of the reservoir near the top of the hill is remarkable because even a portion could be filled even in extraordinarily rainy years. This means the inhabitants had to pump water up the hill and undoubtedly built a system of not channels but of pipes which would have been necessary to pump it so large. For this reason, it may have been well known in the city as the place for the brewer's cask in Song of Solomon 7:4.

Iron II Persian Transition

Data from several excavations now indicate that the region (Hisban, Umayyad, Jawa, Amman, Salt) and their seas was not destroyed by the Babylonians but instead flourished through the Babylonian and into the Persian periods, perhaps as late as the fourth century B.C. Contrary to the assumptions of earlier studies (Lambert 1967), there was little or no break in the time of the Babylonian, plenty of Judah.

We began the story at Hisban where, near the top of the hill, the excavations, first of Horn and then of Geraty, uncovered the large plastered reservoir mentioned above. It was filled with tons of debris from occupation levels, bulldozed into it when the site was rebuilt in the Hellenistic period. Sauer, the pottery specialist on the excavation, first recognized that, while most of the thousands of pot sherds in the fill seemed to date to the end of the Iron Age and the Persian period (the seventh to fifth centuries B.C.), they were very different from the sherds in contemporary deposits west of the Jordan

Raet, Lugenhorn and Sauer 1972. I was therefore difficult to use the ceramic chronologies worked out for the various assemblages of Caspordan to help analyze the pottery of Hisban.

Meanwhile, excavations in the region of an old Ammonite-Safet, Ramm al-Hera, Amman, Samakh and various lower sites unearthed identical pottery but sites to the south (Moab and north) found several different types. Could the vessels Sauer had studied be identified with an already known Ammonite? The region in which the distinctive pottery was found corresponded quite well with the borders of the Ammonites as known from biblical, Assyrian and later sources. Within the fill of the Hisban reservoir were several ostraca written in Ammonite script and language as shown by Cross 1973. They dated like the pottery to the late seventh and sixth centuries B.C.

However, Cross recognized a few other cuneiform writers in the Ammonite script which he dated to the late sixth century B.C. First was a Late Persian script which wrote used Aramaic as the international mode of writing. Surprisingly, the language used on these was a displayed feature as they associated with Ammonite. This was not to mean that, like the pottery, the Ammonites remained in their home and while Babylon and Persia ruled. Hubner's suggestion that the ostraca from Hisban were actually Moabite is a serious spuriously interpreted biblical evidence above and does not take sufficiently into account the archaeology of the site, paleontology and more. Serious linguists see a furthering review in Hubner's volume by Adelman and Bert in *Journal of the American Oriental Society*.

The result of the work by Sauer and Cross was to suggest strongly that the Ammonites continued to inhabit their region long after the Babylonians conquered the area and did not seem to have disappeared. But scholarly theories especially those with biblical connections, die hard. While a few scholars, such as Sauer, forged ahead with new interpretations, some of us realized that a few Ammonites may have remained after the Babylonian destruction, though at any rate to write the Hisban Aramaic ostraca.

The Fall of Ummayri Administrative Structures

It was at this point in the debate that we began digging at Tall al-'Umayri, which, unknown to us, contained secrets which would force

us not only to accept the continuity of the Ammonite city into the Persian period, but to allow us to begin making suggestions as to why they continued while Judah went into exile.

Three large public buildings and one large domestic complex at the western edge of the site have so far been excavated (figs 1, 2, and 3). The walls of Buildings A, B, and C (in fig. 1) are administrative structures, are well over 1 m. thick, some are almost 2 m. thick, and must have stood at least two stories high. Below the walls are basements, very deep into the ruins of earlier Iron II and Iron I phases. Basements are rare in this part of the ancient world and their presence only serves to emphasize the importance of the role of these buildings at Umayy. There were two primary phases of the complex. The earlier phase (Phase 2) here contains mostly clayey masonry near the reading level of the walls. Most are made of beaten earth, but a few rooms were paved with oblong tiles. One of the rooms was a far typical of the mid-sixth century. Here (fig. 1, 2, 3) the upper surfaces (Phase 1) were often decorated with tiles, except for the southernmost and largest room where it was a floor with at least two layers of excellently preserved pavement. The tiles between the two floors came a slant from an Attic vessel that must date to the late sixth or fifth centuries (Waldhaum 1991), indicating that Phase 1 must date to the fifth or later. Later walls dating to the Persian period covered the complex.

Two inscriptions help answer the question of the construction date of the complex. The first inscription was an inscription found in a wall below the foundation of the first walls of the domestic complex associated with the southernmost of the north. It is a typical inscription with 11 letters. The date of the Ammonite cursive writing belongs roughly to the middle of the sixth century B.C. (Simpson 1997) as suggested by the orthographic change of *am* to *a* a generation earlier or later. This means the founding of the complex must be somewhere near the middle of the sixth century.

The second find was a seal impression discovered in a potsherd above Building C. Because the top of the hill was used as an agricultural field for centuries after the administrative buildings were last used, many of the objects from the upper stories of our buildings are found only in a deep layer of topsoil. The seal impression turned out to be much more important than most (figs 10, 3 and 10, 4). Unlike the vast majority of other seals and seal impressions, the owner was not merely a merchant or scribe, but a high official of the Ammonite royal government. Even the picture in the middle of the seal, boasted

of his royal emblems. The winged scarab beetle, pushing a small solar disk or dung ball immediately in front and the standards on either side, are well known royal symbols on seals from ancient Israel and Ammon (Herr 1983; Younger 1985).

Ammonite writing is characterized by the upright stance of its vertical letters, best seen on the top line of this inscription. The first line contains the name of the owner of the seal, Mikom'ur ("Mikom is light," preceded by a preposition meaning "belonging to." Just below the two royal standards, banking the scarab beetle, as if they were part of the standards, are the first two letters of the word describing his official position, *bd.* "servant of." This is an exalted title on ancient seals and the next word invariably designates a king. He was a servant, or official, of the king.

The king's name that follows on the bottom line is not remarkable. Ba'alvasha' (or Ba'laha') [Hendel 1996], meaning "Ba'al saves," similar to Elisba', "God saves." Based on the writing style, the seal dates to the impression dated to the early sixth century. Who was this king Ba'alvasha? The late Robert Borger, director of our regional survey when the impression was first found, first realized this was the Ammonite version of an obscure king mentioned in the Bible (Isaiah Jer 40:14). Soon after Nebuchadnezzar destroyed Jerusalem, our king conspired with a renegade prince of Judah named Ishmael, who had escaped the destruction of Jerusalem. God did not allow a Babylonian-appointed governor of Judah

There is little doubt that Ba'alvasha' and Ba'laha' are two names for the same king. The biblical story occurred in 582 B.C., and the script of the seal dates to the early sixth century. Moreover, the linguistic form of the name Ba'al, is extremely rare in Ammonite names, and it is unlikely that two Ammonite kings from roughly the same time period would have had just their names. Although scholars explain the difference in spelling in a variety of ways, all agree that both names refer to one king (see Auldrecht 1989: 129 for references).

These two inscriptions, the ostrakon, which cannot date much earlier than 580, was found in a phase stratigraphically earlier than the administrative center, and the seal impression, which cannot go much later than 580 or 570, sandwich a date of ca. 580-560 (the foundation of the administrative complex). The seal impression of an administrative official made during the reign of a king who ruled around 580 does not allow us to suggest a later date than about 560, and the ostrakon, written in a script of the mid-sixth century, does not allow us to go earlier than about 580.

Because the seal impression was made by an Ammonite royal official, we could identify our public writings at 'Umayri and 'Umayri as objects associated with them with Ammonite Moab. As other inscribed seals of the Ammonite son of Hay have been found in the earth layers around the administrative buildings, as well as in other areas of the site, I would argue from near an incense-burner at Field F on the eastern side of the sacrum "Shuma" Herr 1991a, revised from *šm'z* upon the oral suggestion of B. Sass and *ap'z* *ba* *hmk'*, "Belonging to Natsar'il son of 'Imashal." Three came from the administrative complex: *'p'm* *ba* *hmk'*, "'Parnats son of 'Imak'il" Herr 1995a, and *'hu* *ba* *hmk'*, "Hon son of Barak'il" fig. 10.5. Many other inscribed seals were also found. Indeed, after six seasons of excavations we now have a total of 13 seals and seal impressions from 'Umayri, the vast majority of which belong to this phase of occupation or are from topsoil and, thus, most likely come from this occupation phase. Because of the administrative function of the buildings, the presence of these seals and seal impressions is no surprise.

One of the inscribed seals depicts a figure and a typical Neo-Babylonian style. It is reminiscent of two other seals from a hinterland site, Site 84, about 2 km south of 'Umayri. Excavated by David Hopkins, a member of the staff of the site comprised a farm, probably for the production of wine, judging by the three winepresses in the site's storage areas surrounding the building. Seals of other sites, farmstead sites most constructed of very large stones, have been discovered by the hinterland survey led by Gyselyn LaBianca and Gary Christopherson in the region surrounding 'Umayri, but none produced the well-preserved finds that Site 84 did. However, all of them contained winepresses in their immediate environs and the pottery from a very few sites is identical to that from the administrative complex at 'Umayri. Because of the ceramic, glyptic, and other similarities of material culture between the farmsteads and 'Umayri, it is reasonable to conclude that these hinterland farms were contemporary with and possibly functioned together with the administrative center at 'Umayri.

It is not a major leap of reason to suggest that the administrators at 'Umayri were organizing wine-production at the farmsteads for the Ammonite monarchy. The presence of the seals representing administrative activities suggest this as a possible explanation. But why were the administrative complex at 'Umayri and the farmsteads constructed? Again the regional survey points in the direction of an answer. Sites dated earlier in Iron II than the foundation of 'Umayri

were not frequent in our region. Tell Jawa, ca. 4 km. e. the cas-
 primarily was occupied as was a small portion of 'Umayri, but the
 immediate region was relatively empty of occupation. Most likely
 the fields were being under-strewn agriculturally. The survey has
 also noted that the farmstead sites were consistently associated with
 winepresses and were built of similar materials to the vineyards. These wine-
 production facilities remind one of the Song of the Vineyard in Isaiah
 5, probably imposed near the beginning of Iron IIc. These sites
 continued into the Persian period with no apparent break in activity.
 It seems that the 'Umayri administrative center and the farmsteads
 were part of a well-orchestrated governmental infrastructure for the
 production of wine. Certainly, local people did not grow much wine
 on the Tell Jawa hill. The 'Umayri had, with its own resources, built
 farmsteads of large scales in similar masonry techniques. There must
 have been capital and labor investment by the Ammonite central gov-
 ernment for such a rapid and uniform construction of infrastructure.

But why did the Ammonite monarchy decide to invest so heavily in a region? Josephus gives us a strong clue in *Antiquities* 10.9.7
 where he mentions that, after the murder of Gedecias in 562 B.C.,
 Balak was overcame Ammon. We suggest that the 'Umayri admin-
 istrative center was built by the Ammonite monarchy to administer
 government-sponsored grain practices at the farmsteads. The pro-
 duction was to pay for wheat at Babylon after the Babylonians
 took over Ammon in 582. The collection of the grain and shipment of
 the wine was handled by the officials who had working at 'Umayri.
 The seals represent the officials or the farmers selling or returning
 their production to the crown as taxes.

Thus if this scenario is accepted, the best date for the construc-
 tion of the administrative complex at 'Umayri and the contempo-
 rary farmsteads of the region is very close to the BC. We therefore
 envision a relatively empty area in the southern Ammonite hills
 through most of Iron II, only a small settlement occurred at 'Umayri
 during the ninth and/or eighth centuries. In the early sixth cen-
 tury, following the apparent Babylonian subjugation of the Ammonite
 governmental structure, investment in the region of these farmsteads
 to move in from elsewhere, possibly the capital city at Amman.
 Farmsteads that were built and seeded with government land in order
 to produce wine. The water source at 'Umayri may have aided
 this production.

The Persian Period

The administrative buildings seem to have continued well after the time of Bashshat with only slight changes. Two pieces of Ammonite pottery, imported from Greece in the late sixth or fifth centuries B.C. were discovered at 92 between the two floor levels in one of the administrative buildings (Waldhaun 1991). Then, in 1989 and 1990, four other finds appeared in topped above the administrative buildings. They were again seal impressions (Fig. 10) shows one of them. Stamped into the mud-brick wall in the case of the other three, there was no artwork on them and the letters were much larger and more crutely shaped than those on the Ammonite seals. The script was not Ammonite, but Aramaic and dated to the very end of the sixth century or the beginning of the fifth century B.C. when Persians ruled the region. It is not at all certain whether the Heshmer inscription, the language was Ammonite, since they may include Ammonite.

Two of the impressions read exactly the same. One was made by two different seals. Here, *Shub*. The first three letters make up a typical Ammonite nickname or hypocoristic of *Shubai* perhaps short for *Shub'il*. It could also be an Aramaic hypocoristic, but the letters of the next word, *Am* make up the consonants of the actual name 'Ammon'. Thus both the impressions may be loosely translated, 'Shubai' of 'Ammon.' These impressions are similar to a class of seals of the same type, found by the same person in the Jerusalem region that contain the name *Shubai* (Fig. 11). They occur in which the Aramaic script and date to the late sixth or early fifth centuries B.C. The two 'Ammon seals are precisely the Ammonite version of these *Shubai* seals.

They have been written along the function of the *Shubai* seals. Most scholars now believe that they were part of the Persian provincial taxation system usually stamped onto jars of goods (Stein 1982: 202-6). The majority of them do not carry a personal name, but those that do probably indicate either the governor or the Persian province of origin or the provincial treasurer in charge of tax collection. The same most likely holds true for the two Ammon seal impressions from 'Ullayit. *Shubai* was either the governor or treasurer of the Persian province of Ammon. Recently, in a survey of history and politics in Persia during the Persian period, Lewy has correctly admitted there was not enough evidence to state whether

not Ammonite was indeed a province (Lambert 1960). But with so few seal impressions we are now or more certain. There seems to have been a province of Ammon and Shuba was one of its major officers.

The presence of two impressions made with different seals confirms an official connection with them. Pottery is collected from locations probably had their own stamps bearing Shuba's name that they placed on jars made by the government. The jars transported abroad the country probably paid taxes in kind. At least six of these jars ended up in the same administrative building at Tell al-Umayri where they may have been intended to be filled with wine but were broken and so stayed at the site.

There is no evidence that the Ammonites ever left the region after they became subject to Babylon for whom they remained part of the Persian empire. There separate lines of evidence support this. First is the evidence of language: in the Heshbon area and possibly at Umayri seal impressions. Although the Aramaic script was used, the language was Ammonite. Second is the architectural evidence: a substantial domestic complex that housed Malkam's official duties during the Ammonite period, which was still in use (except for raised surfaces, when Shuba collected taxes for the Persian empire about 50 to 100 years later).

Third is the pottery. In the past, Welch and many other archaeologists did not recognize that people lived in the region of Ammon after the Babylonian exile because pottery typical of the Persian period west of the Jordan River was not found in the region of Ammon. Studies of Ammonite pottery, especially the pottery of Heshbon and Umayri, show that the "typical" Persian vessels at Eshdod and other sites were jars and mortars which were never made east of the Jordan but instead potters continued to make local wares, except with wheel burning, at least during the early part of the Persian period (Herr 1991). There was apparently no cultural disruption significant enough to alter potting traditions.

The Ammonites at Umayri prospered right through the sixth century B.C. into the Persian period, perhaps as late as the fourth century, based on pottery that is very close to Hellenistic forms (Herr 1991b). There was no major change at the beginning of the Persian period, although they were controlled by the Persian empire; yet they wrote in the Aramaic script, their basic culture including

language and pottery techniques remained essentially the same as it had been at the close of their political independence.

Acknowledgments

The Madaba Plains Project is sponsored by Andrews University in consortium with Canadian University College, LaSalle University, and Wila Wila College. I wish to thank my Co-Directors for their support and encouragement: Larry Geraty, Senior Project Director; Douglas Clark (Consortium), Oystein LaBianca, Hatchlands, and Randall Younker (Tall Jalul).

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$$\begin{aligned} Y_{\text{out}} &= K_{\text{out}} \cdot X_{\text{in}} \\ Y_{\text{out}} &= \frac{1}{1 + j\omega RC} X_{\text{in}} \\ Y_{\text{out}} &= \frac{1}{1 + j\omega RC} X_{\text{in}} \\ Y_{\text{out}} &= \frac{1}{1 + j\omega RC} X_{\text{in}} \\ Y_{\text{out}} &= \frac{1}{1 + j\omega RC} X_{\text{in}} \\ Y_{\text{out}} &= \frac{1}{1 + j\omega RC} X_{\text{in}} \end{aligned}$$

$\lambda = 0.1$ $\lambda = 0.2$ $\lambda = 0.3$ $\lambda = 0.4$ $\lambda = 0.5$ $\lambda = 0.6$ $\lambda = 0.7$ $\lambda = 0.8$ $\lambda = 0.9$ $\lambda = 1.0$

12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1044 10

1. *Journal of the American Medical Association*, 1997; 277: 1033-1038.

$$A_{\text{eff}} = \frac{A}{1 + \frac{A}{A_0}}$$

$\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$

1. The first step is to identify the key components of the system. This involves understanding the hardware, software, and data involved in the process.

11. $\frac{1}{2}x^2 + 3x + 2 = 0$ $x^2 + 6x + 4 = 0$ $x^2 + 6x + 9 = 1$
 $\frac{1}{2}(x^2 + 6x + 9) = \frac{1}{2}$ $\frac{1}{2}(x^2 + 6x + 9) = \frac{1}{2}$ $\frac{1}{2}(x^2 + 6x + 9) = \frac{1}{2}$
 $\frac{1}{2}(x+3)^2 = \frac{1}{2}$ $\frac{1}{2}(x+3)^2 = \frac{1}{2}$ $\frac{1}{2}(x+3)^2 = \frac{1}{2}$
 $(x+3)^2 = 1$ $(x+3)^2 = 1$ $(x+3)^2 = 1$
 $x+3 = \pm 1$ $x+3 = \pm 1$ $x+3 = \pm 1$
 $x = -3 \pm 1$ $x = -3 \pm 1$ $x = -3 \pm 1$
 $x = -4, -2$ $x = -4, -2$ $x = -4, -2$

65. $\frac{1}{2}$

Σ-Bede	Κ-Γραμμή	π=34
Περίοδος	12	

$$\beta \text{ str}_{\text{str}} \vdash \text{N}[\text{str}]_{\text{str}} \quad (1)$$

5. $\text{AM}(\text{P}) \leq \text{P}$ if and only if $\text{P} = \text{P}^{\text{NP}}$.

2	15	1
2	15	1

Day: _____ Age: _____ Sex: _____

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

$\frac{1}{2} \left(\frac{1}{2} \right) = \frac{1}{4}$

3. (1) $\frac{1}{2} \left(\frac{1}{2} + \frac{1}{2} \right) = \frac{1}{2}$

As a result, the model is able to capture the nonlinear relationship between the variables and the response variable.

$$\frac{d}{dt} \left(\frac{\partial L}{\partial \dot{x}} \right) = \frac{\partial L}{\partial x}$$
[illegible]

Table 1. *Continued*

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1

$\frac{1}{2} \left(\frac{1}{2} \right) = \frac{1}{4}$

$$M_{\text{eff}} = K_{\text{eff}} \frac{1}{1 + \frac{1}{K_{\text{eff}}}}$$

For the first two cases, the following lemma is useful.

74. 400 100 200 300 400 500 600 700 800 900 1000

1. The first group of variables includes the following:

Appendix 1. *Continued*

1. *Journal of the American Medical Association*, 1997; 278: 1039-1044.

3

1992-1993, 1994-1995, 1996-1997, 1998-1999, 2000-2001, 2002-2003, 2004-2005, 2006-2007, 2008-2009, 2010-2011, 2012-2013, 2014-2015, 2016-2017, 2018-2019, 2020-2021, 2022-2023, 2024-2025, 2026-2027, 2028-2029, 2030-2031, 2032-2033, 2034-2035, 2036-2037, 2038-2039, 2040-2041, 2042-2043, 2044-2045, 2046-2047, 2048-2049, 2050-2051, 2052-2053, 2054-2055, 2056-2057, 2058-2059, 2060-2061, 2062-2063, 2064-2065, 2066-2067, 2068-2069, 2070-2071, 2072-2073, 2074-2075, 2076-2077, 2078-2079, 2080-2081, 2082-2083, 2084-2085, 2086-2087, 2088-2089, 2090-2091, 2092-2093, 2094-2095, 2096-2097, 2098-2099, 2100-2101, 2102-2103, 2104-2105, 2106-2107, 2108-2109, 2110-2111, 2112-2113, 2114-2115, 2116-2117, 2118-2119, 2120-2121, 2122-2123, 2124-2125, 2126-2127, 2128-2129, 2130-2131, 2132-2133, 2134-2135, 2136-2137, 2138-2139, 2140-2141, 2142-2143, 2144-2145, 2146-2147, 2148-2149, 2150-2151, 2152-2153, 2154-2155, 2156-2157, 2158-2159, 2160-2161, 2162-2163, 2164-2165, 2166-2167, 2168-2169, 2170-2171, 2172-2173, 2174-2175, 2176-2177, 2178-2179, 2180-2181, 2182-2183, 2184-2185, 2186-2187, 2188-2189, 2190-2191, 2192-2193, 2194-2195, 2196-2197, 2198-2199, 2200-2201, 2202-2203, 2204-2205, 2206-2207, 2208-2209, 2210-2211, 2212-2213, 2214-2215, 2216-2217, 2218-2219, 2220-2221, 2222-2223, 2224-2225, 2226-2227, 2228-2229, 2230-2231, 2232-2233, 2234-2235, 2236-2237, 2238-2239, 2240-2241, 2242-2243, 2244-2245, 2246-2247, 2248-2249, 2250-2251, 2252-2253, 2254-2255, 2256-2257, 2258-2259, 2260-2261, 2262-2263, 2264-2265, 2266-2267, 2268-2269, 2270-2271, 2272-2273, 2274-2275, 2276-2277, 2278-2279, 2280-2281, 2282-2283, 2284-2285, 2286-2287, 2288-2289, 2290-2291, 2292-2293, 2294-2295, 2296-2297, 2298-2299, 2300-2301, 2302-2303, 2304-2305, 2306-2307, 2308-2309, 2310-2311, 2312-2313, 2314-2315, 2316-2317, 2318-2319, 2320-2321, 2322-2323, 2324-2325, 2326-2327, 2328-2329, 2330-2331, 2332-2333, 2334-2335, 2336-2337, 2338-2339, 2340-2341, 2342-2343, 2344-2345, 2346-2347, 2348-2349, 2350-2351, 2352-2353, 2354-2355, 2356-2357, 2358-2359, 2360-2361, 2362-2363, 2364-2365, 2366-2367, 2368-2369, 2370-2371, 2372-2373, 2374-2375, 2376-2377, 2378-2379, 2380-2381, 2382-2383, 2384-2385, 2386-2387, 2388-2389, 2390-2391, 2392-2393, 2394-2395, 2396-2397, 2398-2399, 2400-2401, 2402-2403, 2404-2405, 2406-2407, 2408-2409, 2410-2411, 2412-2413, 2414-2415, 2416-2417, 2418-2419, 2420-2421, 2422-2423, 2424-2425, 2426-2427, 2428-2429, 2430-2431, 2432-2433, 2434-2435, 2436-2437, 2438-2439, 2440-2441, 2442-2443, 2444-2445, 2446-2447, 2448-2449, 2450-2451, 2452-2453, 2454-2455, 2456-2457, 2458-2459, 2460-2461, 2462-2463, 2464-2465, 2466-2467, 2468-2469, 2470-2471, 2472-2473, 2474-2475, 2476-2477, 2478-2479, 2480-2481, 2482-2483, 2484-2485, 2486-2487, 2488-2489, 2490-2491, 2492-2493, 2494-2495, 2496-2497, 2498-2499, 2500-2501, 2502-2503, 2504-2505, 2506-2507, 2508-2509, 2510-2511, 2512-2513, 2514-2515, 2516-2517, 2518-2519, 2520-2521, 2522-2523, 2524-2525, 2526-2527, 2528-2529, 2530-2531, 2532-2533, 2534-2535, 2536-2537, 2538-2539, 2540-2541, 2542-2543, 2544-2545, 2546-2547, 2548-2549, 2550-2551, 2552-2553, 2554-2555, 2556-2557, 2558-2559, 2560-2561, 2562-2563, 2564-2565, 2566-2567, 2568-2569, 2570-2571, 2572-2573, 2574-2575, 2576-2577, 2578-2579, 2580-2581, 2582-2583, 2584-2585, 2586-2587, 2588-2589, 2590-2591, 2592-2593, 2594-2595, 2596-2597, 2598-2599, 2600-2601, 2602-2603, 2604-2605, 2606-2607, 2608-2609, 2610-2611, 2612-2613, 2614-2615, 2616-2617, 2618-2619, 2620-2621, 2622-2623, 2624-2625, 2626-2627, 2628-2629, 2630-2631, 2632-2633, 2634-2635, 2636-2637, 2638-2639, 2640-2641, 2642-2643, 2644-2645, 2646-2647, 2648-2649, 2650-2651, 2652-2653, 2654-2655, 2656-2657, 2658-2659, 2660-2661, 2662-2663, 2664-2665, 2666-2667, 2668-2669, 2670-2671, 2672-2673, 2674-2675, 2676-2677, 2678-2679, 2680-2681, 2682-2683, 2684-2685, 2686-2687, 2688-2689, 2690-2691, 2692-2693, 2694-2695, 2696-2697, 2698-2699, 2700-2701, 2702-2703, 2704-2705, 2706-2707, 2708-2709, 2710-2711, 2712-2713, 2714-2715, 2716-2717, 2718-2719, 2720-2721, 2722-2723, 2724-2725, 2726-2727, 2728-2729, 2730-2731, 2732-2733, 2734-2735, 27

Thompson, R. A., and J. A. Thompson. 1992. *Estimating the effects of habitat fragmentation on the distribution of a native bird species*. *Conservation Biology* 6: 167-175.

3 2 1 0 9 8 7 6 5 4 3 2 1 0

$$\frac{1}{2} \left(\frac{1}{2} \right) = \frac{1}{4}$$

Table 1. *Continued*

$$\begin{aligned} \frac{1}{2} \frac{d}{dt} \int_{\mathbb{R}^3} |u|^2 dx &= \frac{1}{2} \frac{d}{dt} \int_{\mathbb{R}^3} |u|^2 dx = \frac{1}{2} \frac{d}{dt} \int_{\mathbb{R}^3} |u|^2 dx \\ &= \frac{1}{2} \frac{d}{dt} \int_{\mathbb{R}^3} |u|^2 dx = \frac{1}{2} \frac{d}{dt} \int_{\mathbb{R}^3} |u|^2 dx = \frac{1}{2} \frac{d}{dt} \int_{\mathbb{R}^3} |u|^2 dx \end{aligned}$$

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FIGURES AND TABLES



Fig. 1.1 Map of Ammon with sites listed in text

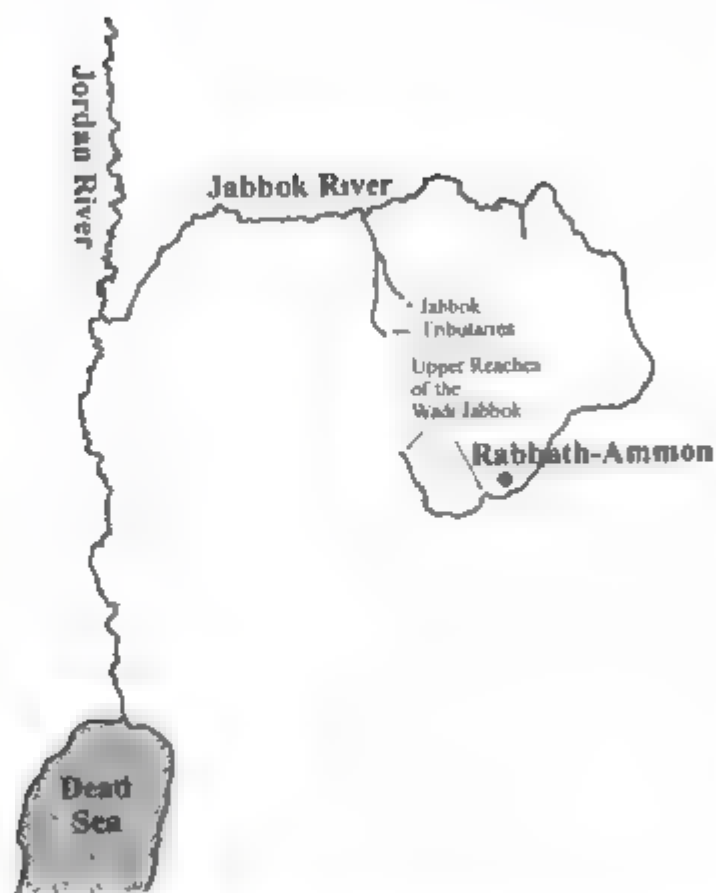


Fig. 2. Map of Ammon showing course of Jabbok and its Tributaries.



Fig. 11. A group of people, including a woman, are shown in a room, possibly a kitchen, where they are engaged in a meal or social gathering. The image is a black and white photograph, showing several individuals seated around a table, with food and drink visible. The setting appears to be a simple, possibly rural, interior space.

COOKING POTS

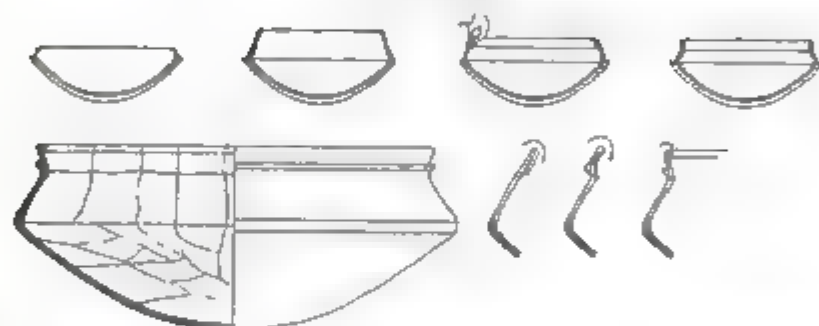


Fig. 32. Manufacture of Late Bronze Age cooking pots usually involved turning an external wheel with clay. To make some deeper pots were able to scrape the rim inwards, when the clay was sufficiently dry. To examine this was mentioned. Drawing prepared with reference to the third Cor. (B. Franken and J. Kalsbeek, 1950, *Excavation at Tell Dor*, III, Fig. 2).



Fig. 3. collated run a 1 mayn

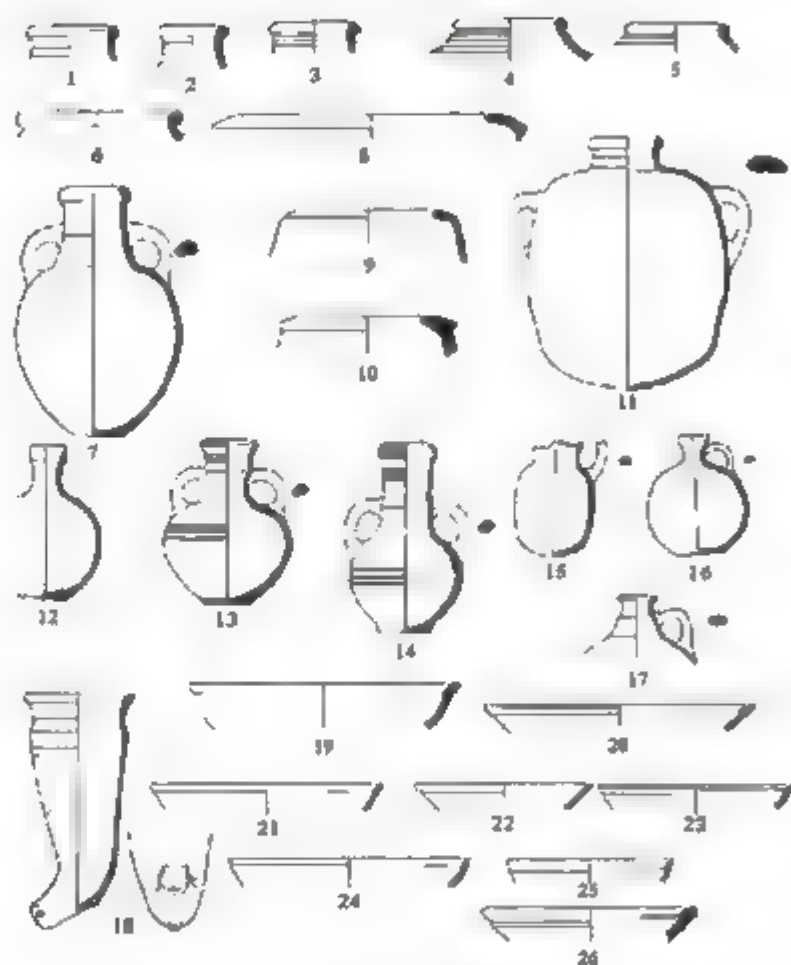


Fig 3.4 Pots from Unayy



Fig. 3.5 Pots from 'Umayyad



Fig. 16 Lamps from Umanin

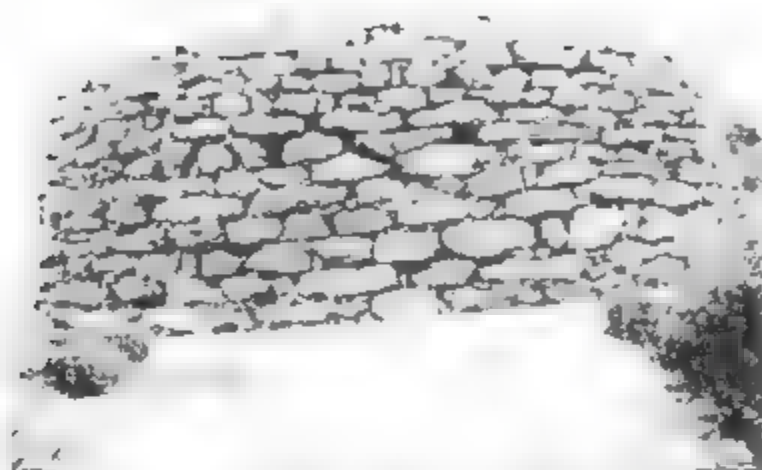


Fig. 4.1 Ammonite Tower Rujm al-Mafar



Fig. 4.2 Ammonite Tower closeup

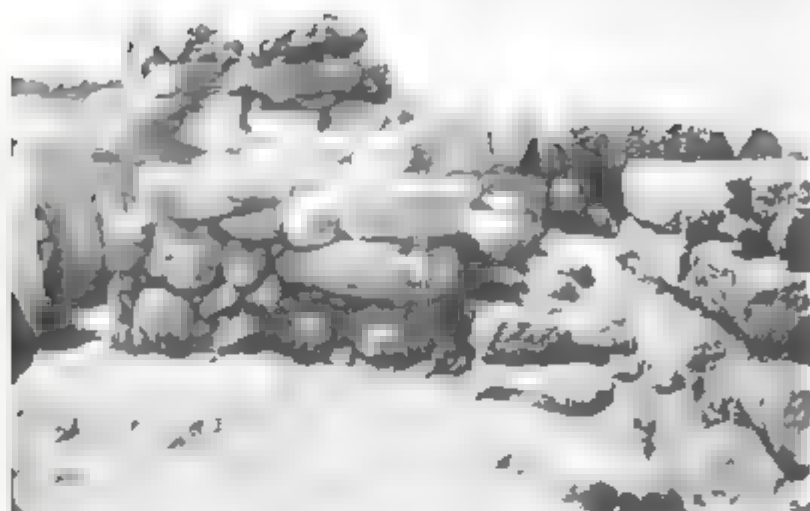


Fig. 4.3 Steeps leading into painted house

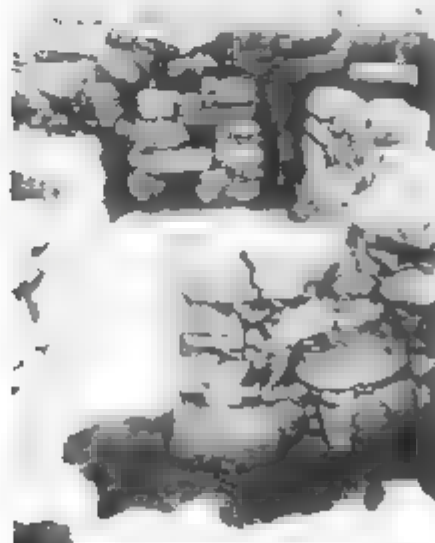


Fig. 4.4 Walls build directly on leveled bedrock Khilda

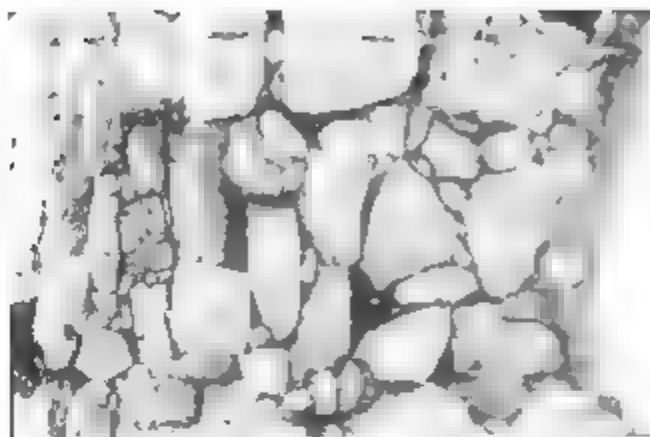


Fig. 4. Nuclei between pores in Khilda.

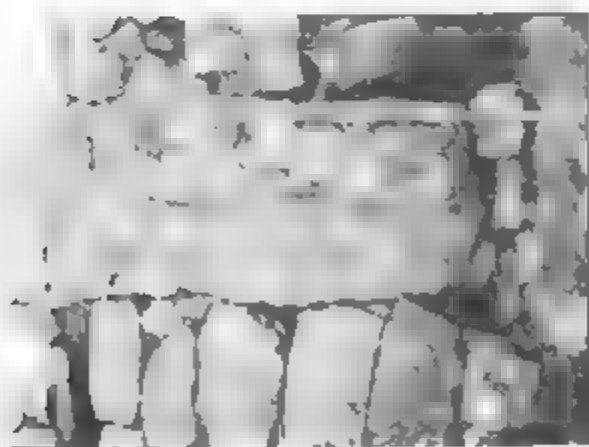


Fig. 5. Khilda irradiation piers in the prepared to see

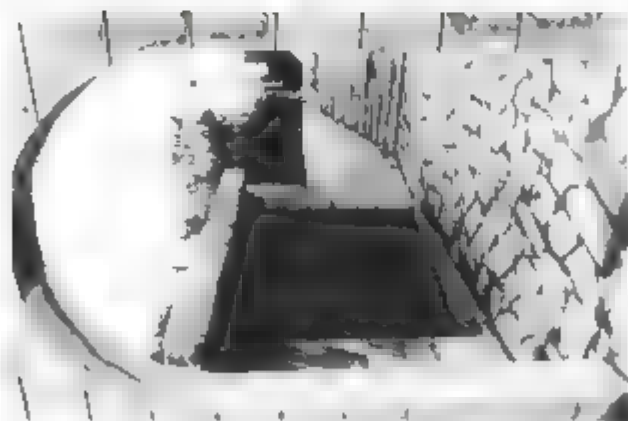


Fig. 4. Amman Citadel, access to the underground water reservoir.



Fig. 4.8. Proto-archaic capital at the Amman Citadel.



Fig. 4.9 Petroglyphic design line at the Arayan Citadel



Fig. 4.10 The plaster on the exterior face of the tower at Khilda

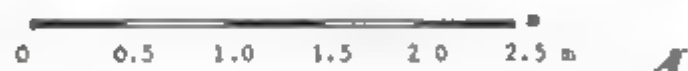


Fig. 1. Boulder-and-chink walls with doorway



Fig. 5.2 Monolithic stone pillars in Building 800

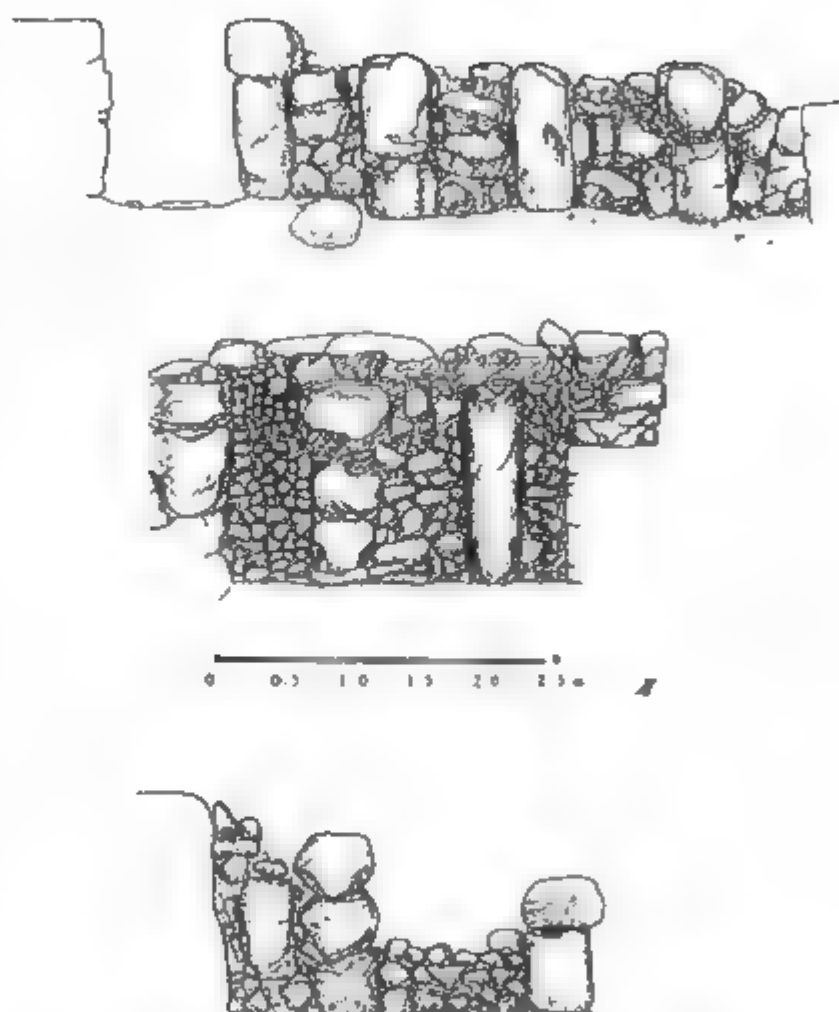


Fig. 3. *a, c* Stacked boulder walls: *a* rectangular pillars with boulders connecting them; Wall 1; *b* variation of pillar types; Wall 2; *c* rounded boulder pillars; wall with boulders connecting them; Wall 3.

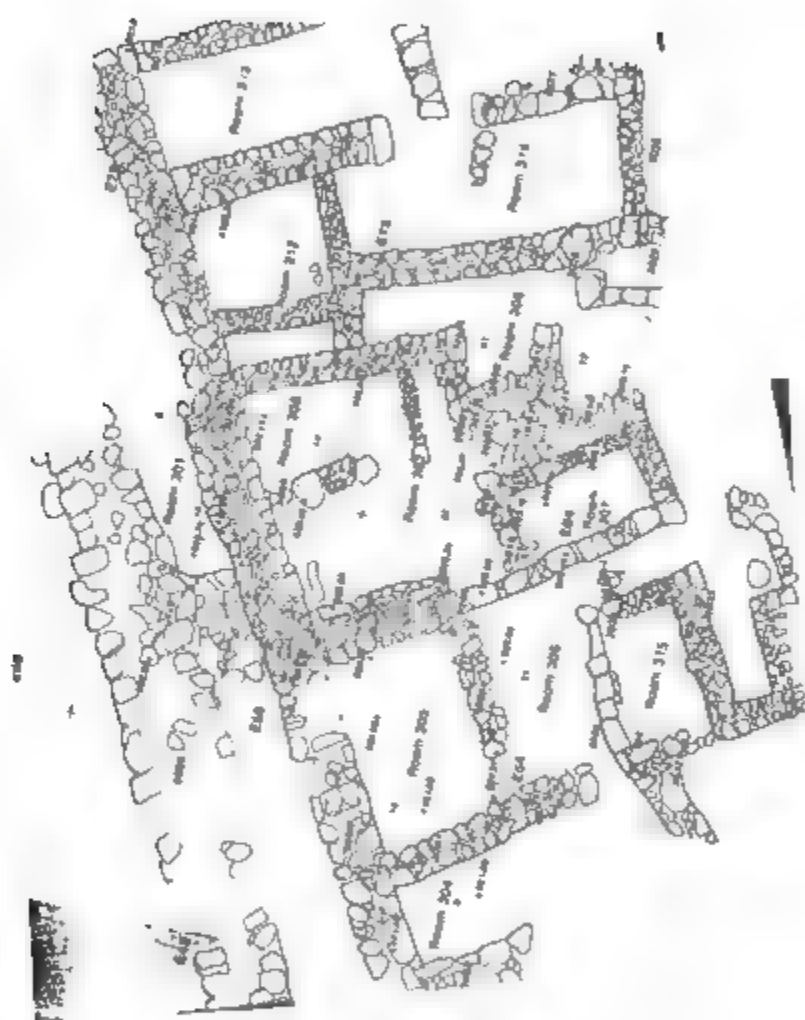


Fig. 3.4 Building 300 at Taq Jawa

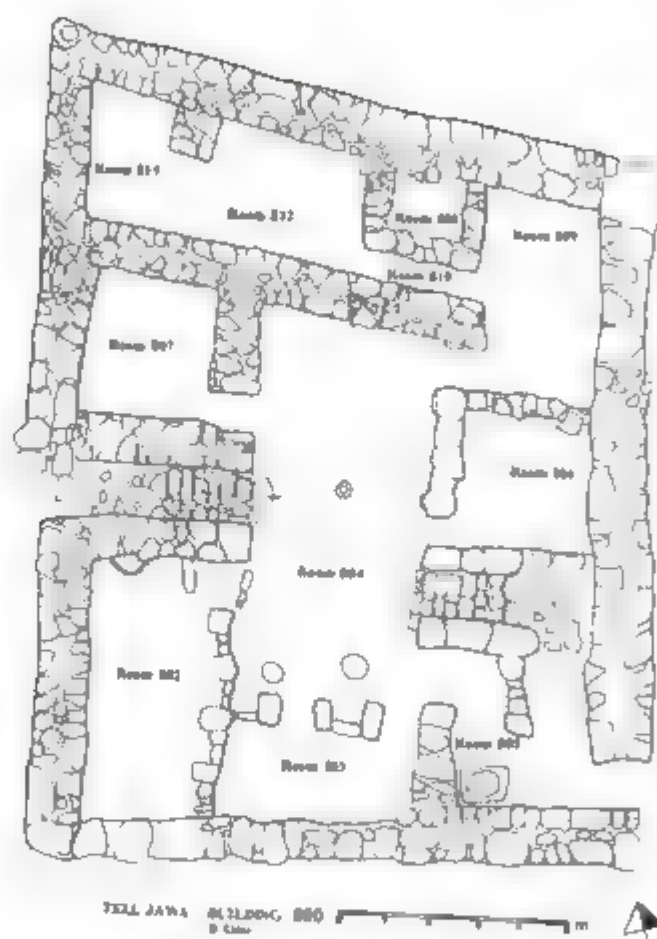


Fig. 5.5 Building 20N at Tell Jawa

Table 9.1

SETTLEMENT PATTERNS IN AMMON: MIDDLE BRONZE AGE TO IRON AGE

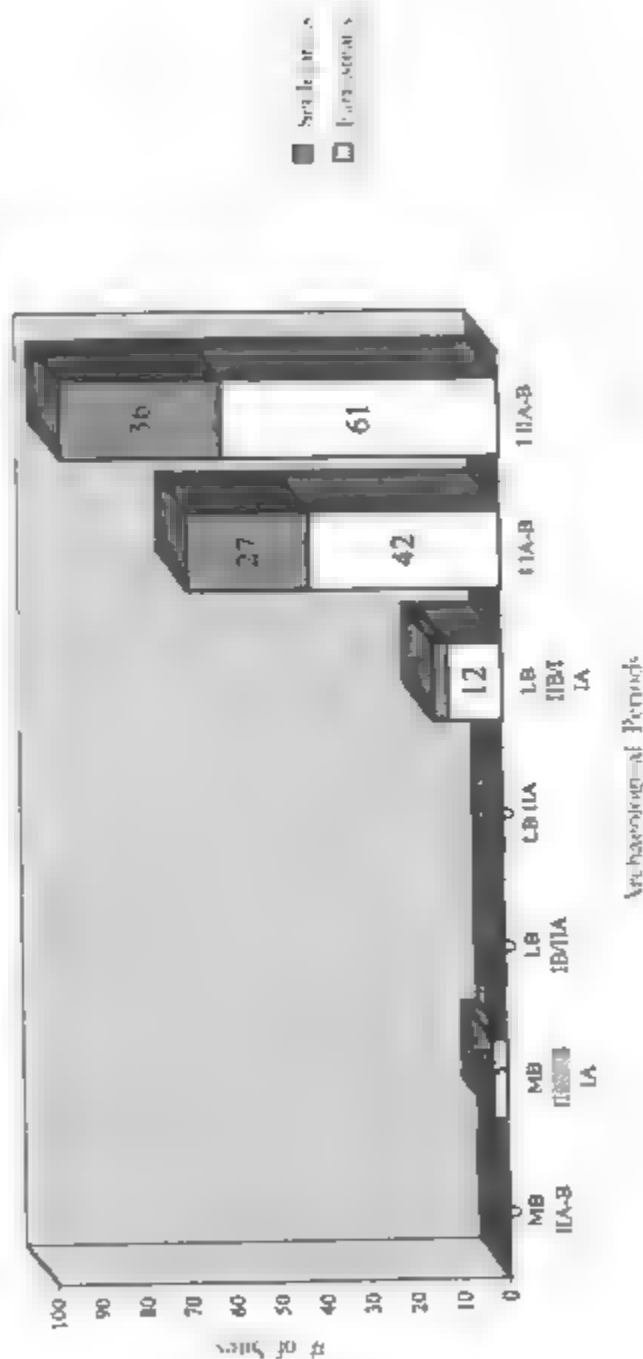


Table 4.2

Amman JR HB from 1A Sites

Site Name	Site Category	Description	Reference
'Anjasa' (Tel)	Large (10-25 dunams)	Settlement	Bellini 1978, Hammer 1983
Tall al-'Umayr	Medium (5-10 dunams)	Settlement	Coffey <i>et al.</i> 1985, 1987
Sidat	Medium (5-10 dunams)	Settlement	Hammer 1983, 1987
Umm al-Danar	Small (2-5 dunams)	Settlement	Al-Gobern 1987, 1991
Jawā	Small (2-5 dunams)	Settlement	Youssef <i>et al.</i> 1990
Sidat	Small (2-5 dunams)	Settlement	Wright 1985, 1992
Kharba Qudat	Small	Settlement	Al-Dawwad <i>et al.</i> 1991, 1992
Rajm al-Haw	Very Small	Qasr	McCarty 1986, 1987
'Ayn al-Arpa (Surf area)	Very Small	Quadrilateral	Hammer 1983, 1987
Al-Madnak	Very Small	Qasr	Youssef 1983, 1992, 1993, 1994
Hamd Um Kharaba	Very Small	Farmstead	Al-Gobern 1987, 1991, 1992
Jabal al-Jawar	Very Small	Qasr	Crone <i>et al.</i> 1987, 1992
Kharba al-Jahrah	Very Small	Qasr	Crone <i>et al.</i> 1987, 1992
Rajm Madbak	Very Small	Qasr	Crone <i>et al.</i> 1987, 1992
Kharba	Very Small	Qasr	Abu Dawab <i>et al.</i> 1993, 1994
Hesrah Survey Site 128	Very Small	Farmstead	Hammer 1987, 1992
Ad Zuhrah	Very Small	Settlement	Crone <i>et al.</i> 1987, 1992
Tall al-Rahat Site C 13	Very Small (5-6 dunams)	Farmstead ^a	Kerekes <i>et al.</i> 1978, 1980

Table cont

Site Name	Site Category	Description	Reference
'Iraq al-Ayyar	Very small	Settlement	Butler 919 34 62, McCown 193
Kharbat al-Beder	Very small	Settlement	Glueck 1939 74
Raman al-Farad	Very small	Farmstead	van Rabeen 1978 50 51
Kharbat al-Hajjar	Very small	Settlement	Thompson 972
Kharbat al-Raman	Very small	Settlement	Glueck 1939 92 94
Kharbat Mashm	Very small	Settlement	Glueck 919 18, 86
Aladai	Very small	Qasr	Cumler 1889 1 6, Glueck 1939
Alat Nesei	Very small	Farmstead, towers	Abu Ghannieh 1984 36 5
Alat Zuhri	Very small	Settlement	Cumler and Knaf 1987 292
Bedlib North	Very small	Farmstead	Butler 1987 30
H-shat Sa'ey Site b	Very small	Sheds and tanks	Butler 1987 31
Nasir Hexas Site a	Very small	Sheds and tanks	Butler 1987 72
Jabal al-Fatacc	Very small	Qasr	Butler 1987 80
Kharbat Abu Hammad	Very small	Qasr	Glueck 1939 179 97
Kharbat Bishat	Very small	Qasr settlement	Glueck 1939 190
Kharbat al-Hayh	Very small	Qasr	Glueck 1939 2 3 4
Kharbat al-Bitar	Very small	Qasr tower	Butler 1987 83, Butler 1987 29
Hacc. I rum Karamba	Very small	Settlement	Cumler and Knaf 1987 292
Kharbat ash-Shamsani	Very small	Farmstead	Glueck 919 60
Ah Jurei al-Kazirah	Very small	Farmstead	Glueck 634 229
Raman al-Jish	Very small	Farmstead	Glueck 939 90 93
Raman al-Kusden	Very small	Farmstead	Glueck 1939 204
Raman al-Jah	Very small	Qasr	Glueck 939 207
Raman ash-Sahl	Very small	Qasr	Glueck 939 202
Raman Motus	Very small	Farmstead	Glueck 1939 195
Swehsh ash-Sherqiyeh	Very small	Farmstead	Glueck 1939 159

Asaret Merj as-Sana	Very small	Farmstead	Glueck 1939 196
Al-Qarnai South	Very small	Settlement	Abu Daweh <i>et al.</i> 1901 391
Abu Sana, Hesban 39	Very small	Sheels terraces	Ibach 198 17
Hesban Survey Site 40	Very small	Sheels	Ibach 1987 17
Hesban Survey Site 41	Very small	Farmstead	Ibach 1987 29
Kharba ad-Dhanna	Very small	Settlement Qasr	Glueck 1939 159
Kharba al-Khatnash	Very small	Tower	Glueck 1939 234
Kharba al-Madhar	Very small	Settlement	Glueck 1939 192
Karbal al-Jilhalah	Very small	Qasr	Grandon and Keesel 1987 242
Jabal al-Jawari	Very small	Qasr	Grandon and Keesel 1987 292
Kharba Abu Hweir	Very small	Qasr	Glueck 1939 205
Qasr Abcar	Very small	Qasr	Glueck 1939 160
Qasr al-Wayeh	Very small	Qasr	Glueck 1939 19
Ram Hammad	Very small	Ram	Glueck 1939 61
Ram al-Hajar	Very small	Qasr	Glueck 1939 202
Hesban Survey Site 49	Very small	Sheels	Ibach 1987 17
Hesban Survey Site 29	Very small	Sheels	Ibach 1987 28



Fig. 10. Aerial photo of the walls of the Anjuman-e Persian Administrative Complex, the association of domes in a group.

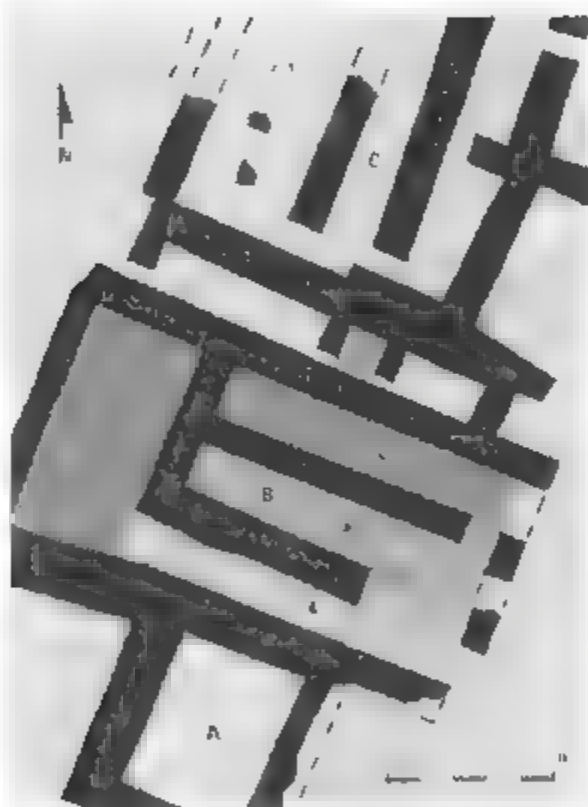


Fig. 12 Plan of the buildings in fig. 11



Fig. 10.3 Seal impression of Bodhisattva



Fig. 10.4 Drawing of the seal impression of Bodhisattva

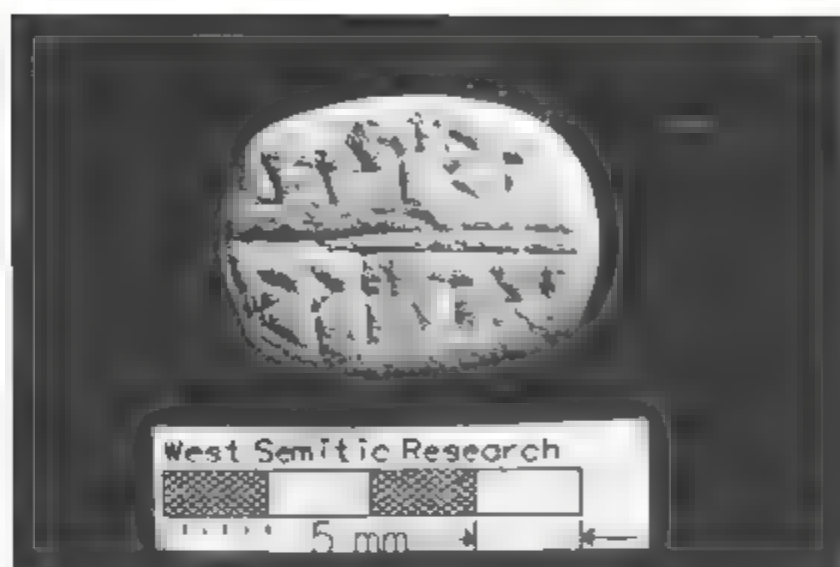


Fig. 13. Seed of *Pinus* sp.

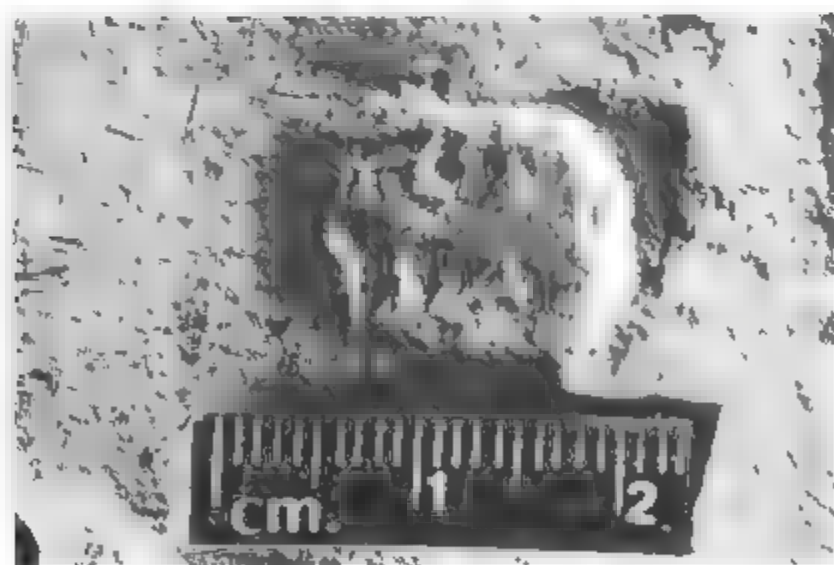


Fig. 14. Seed impression of the Persian province of Anshan.

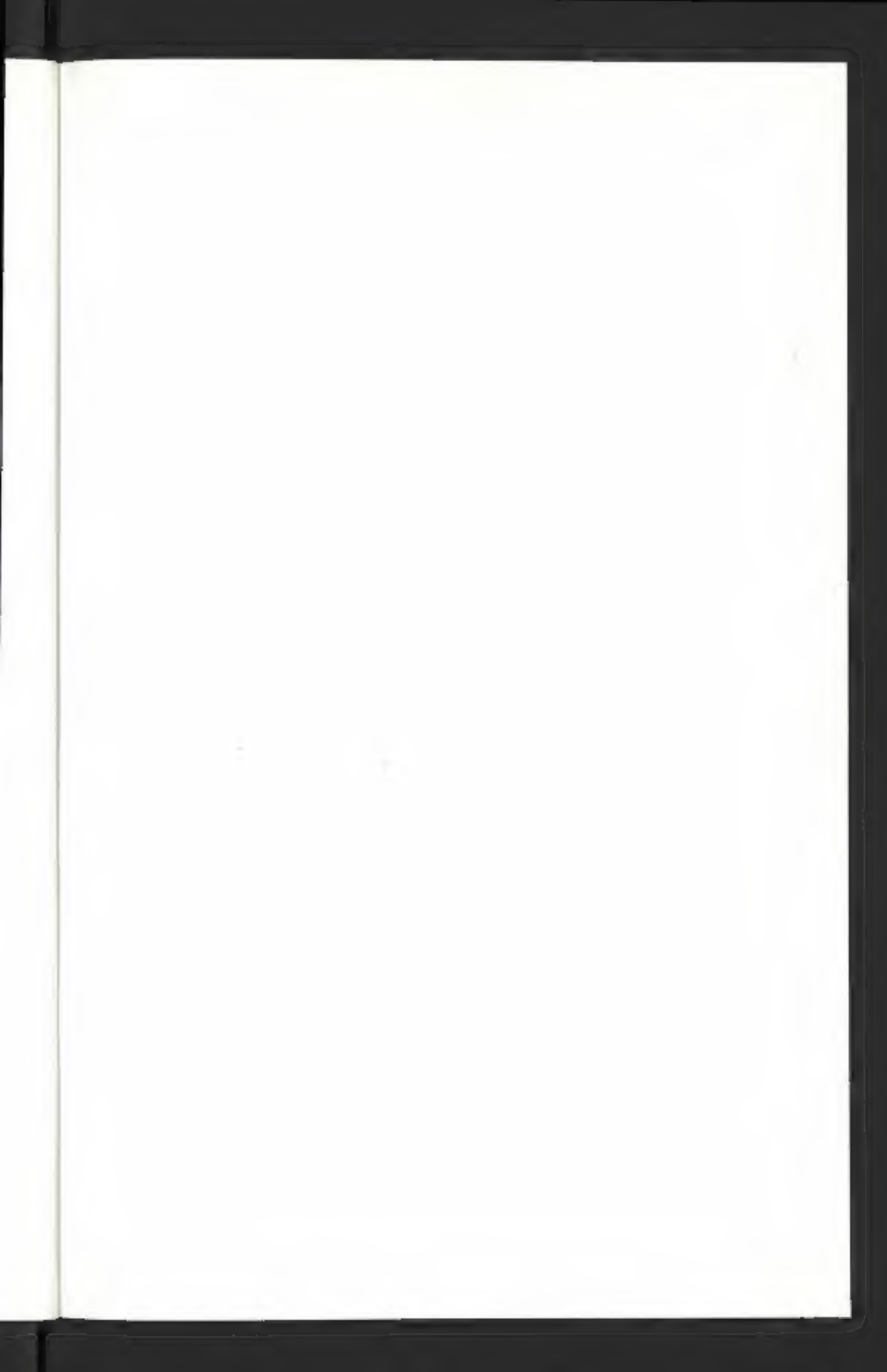
STUDIES IN THE HISTORY AND CULTURE OF THE ANCIENT NEAR EAST

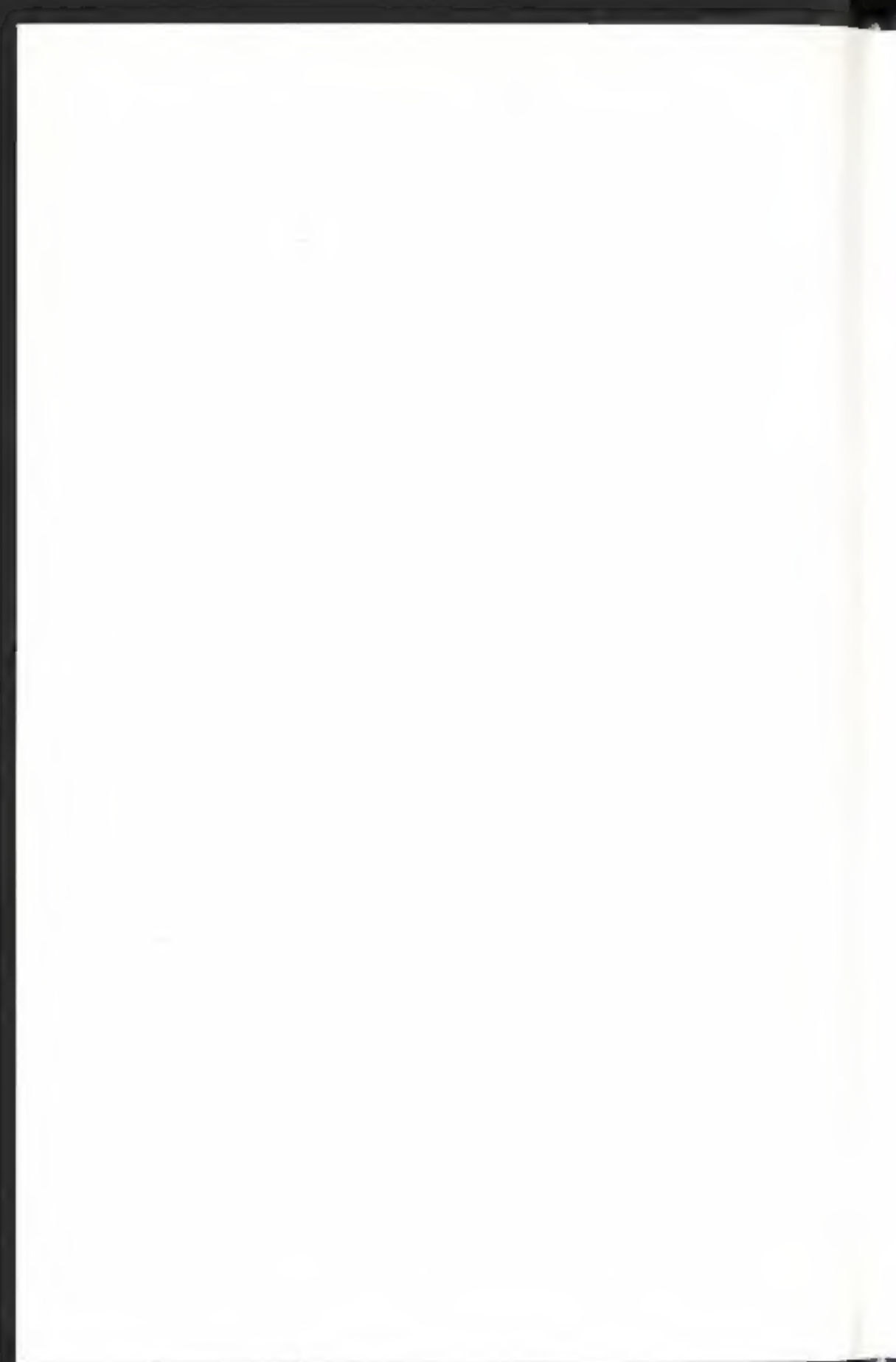
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